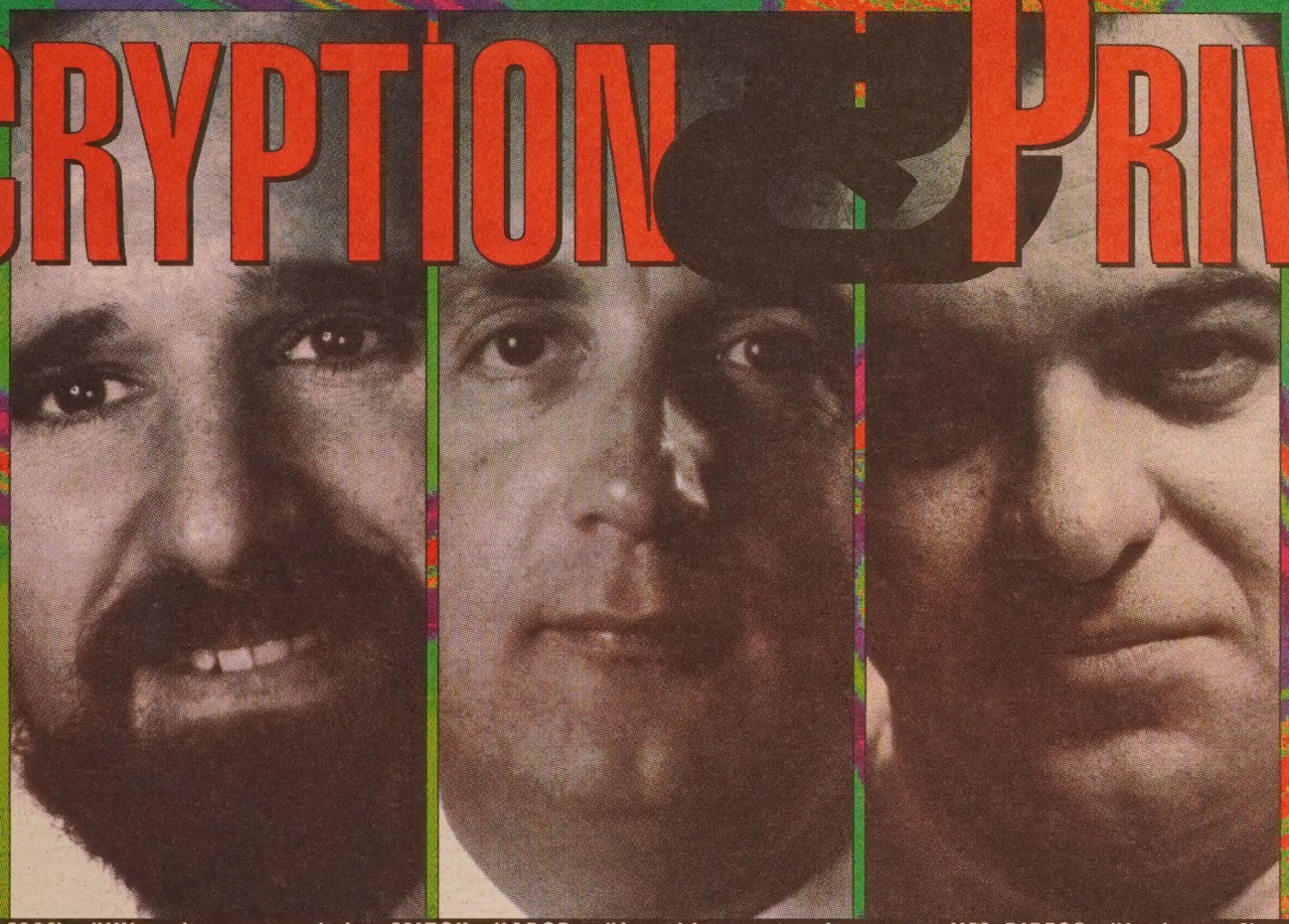
Southern California's Computer Magazine

Feb. 22, 1993 • #106

FREE

MicroTimes™

Encryption & Privacy



MARTIN HELLMAN: "Why do you and I need cryptography? Do we really want all of our medical records available to highschool kids?"

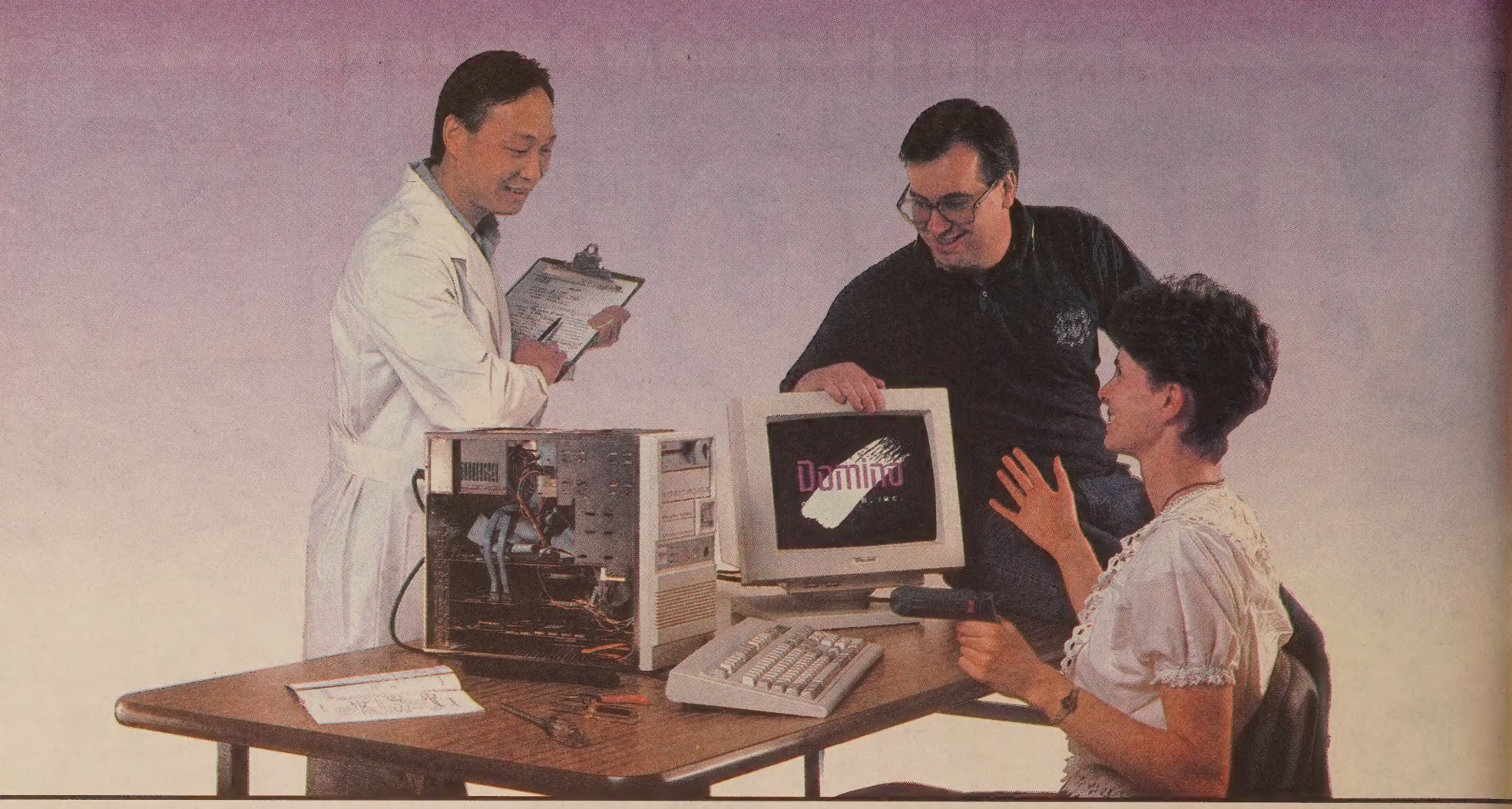
MITCH KAPOR: "In this age when a company's most valuable property may be intangible...an email account may amount to an unlocked door on a warehouse."

JIM BIDZOS: "In Lotus Notes, you would get an account and that's all you'd know. But everything you send will be encrypted and authenticated and it works great."

Perspectives On Digital Security

NEW SECTION INSIDE!

MultiMedia & Beyond



14.4/14.4
FAX/DATA
MODEM
$175
Quantity Limited
to 2 per store

DO IT YOURSELF - AND SAVE!

Install and Configure or Repair Your Own Computer – With Us!

SPECIAL
486DLC/33/64k cache
$225
Quantity Limited

IT'S EASY– In a test done by "Dvorak On Computer" anchor, Leo Laporte, a 486/50 computer was built by Mr. Laporte in our center in 1 hour. Visit one of our 26 convenient California locations and see what everyone is talking about!

BUILD-YOURSELF VGA SPECIAL

- Build a 486DLC/33 MHz SVGA Monitor System with 1MB, 2 Floppy Drives, 40MB Hard Disk, 2 Serial, 1 Parallel, 1 Game Ports **$848**
- Upgrade to 4MB Memory **$95**
- Upgrade to 100MB Hard Disk **$85**

SPECIAL BONUS: Build any 486 & get a Domino Tool Set

HOT PRODUCT!! BitFax/OCR

Turn your fax into editable text. **$69**

New!! SOUND MACHINE

SoundBlaster Card with speakers and joystick **$115**

MOTHERBOARDS

SPECIAL! 386SX/16 MHz	$79
386/33 MHz/ 64k cache	$165
486SLC/33 MHz/64k cache	$225
486/33 MHz/ 64k cache	$485
486DX/50 MHz/ 128k cache	$700
486DX2/66 MHz/128k cache	$748
486/33 MHz/256k VESA Local Bus	$598
486DX2/66 MHz VESA Local Bus	$858

ACCESSORIES

1.2MB or 1.44MB Floppy Drive Mitsumi	$54/49
Dual Fan Full SizeVertical Case w/250W PS	$110
Super VGA Monitor (1024x768)	$249
Non-interlaced Super VGA Monitor	$315
Domino Mouse (3 button)	$13
Hard Disks	$CALL
True Color (16 million color 1MB) SVGA Card	$85
SPECIAL! 96/24 Fax/Data Modem	$59
14.4/14.4 Fax/Data Modem	$195
BitFax for Windows (Software for fax modem)	$48
Bitcom for Windows (Software for modem)	$48
Windows 3.1 Upgrade	$40
Sound Commander EX (Soundblaster& Adlib Comp.)	$85
SONY Internal CD-ROM w/CD software	$395
Mitsumi Internal CD-ROM w/CD software	$310
486/33/80MB Notebook	$2150

Prices subject to change w/out notice. Not responsible for typographical errors.
386, 486, SX are trademarks of Intel Corp.
100% FINANCING AVAILABLE

IRVINE
17145 Von Karman Ave., Ste. 106
Irvine, CA 92714
714/252-8494
Corner of McGaw & Von Karman

PASADENA
1270 Lincoln Ave, Ste. 1600
Pasadena, CA 91103
818/398-0111
2 blks So. of Hwy 210 in Bus. Park of Pasadena Blvd.

CAMARILLO
2390D E. Las Posas Rd., Camarillo, CA 93010
805/987-1861
Corner of Arneill & Las Posas Inside Camarillo Village
OPEN SUNDAY

YORBA LINDA
3890 Prospect Ave., Ste. C
Yorba Linda, CA 92686
714/579-0808
Imperial Hwy. & Prospect
Between Rose & Bastanchury
OPEN SUNDAY

CANOGA PARK
22330 Sherman Way, C7
Canoga Park, CA 91303
818/340-7490
Hwy. 101 exit at Shoup Ave.
Corner of Shoup & Sherman
OPEN SUNDAY

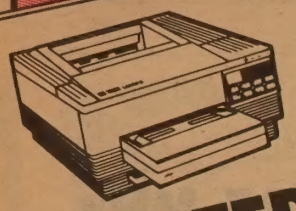
FOUNTAIN VALLEY
11247 Slater Ave.,
Fountain Vly, CA 92708
714/ 557-6666
First block East of Euclid

TORRANCE
2535 237th St., Ste. 102
Torrance, CA 90505
310/325-9701
1 blk west of Crenshaw Blvd.
OPEN SUNDAY BY APPT.

We have 19 Northern California Stores
Call **510/226-1800** for store location.

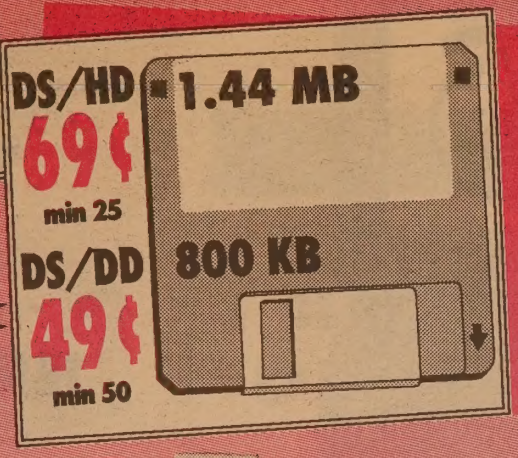
Domino
COMPUTER SELF SERVICE CENTERS

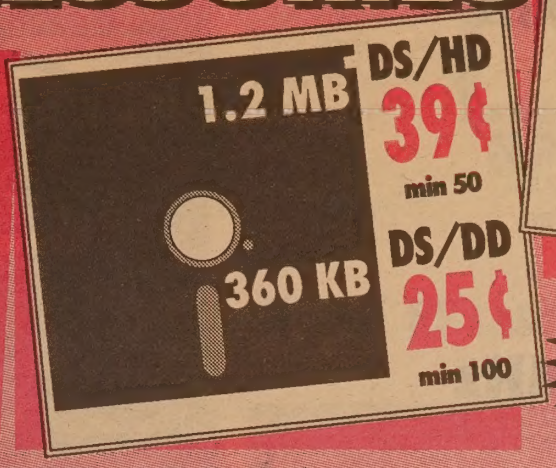
COMPUTER SYSTEMS AND ACCESSORIES



PRINTERS

HP 4	$1399
HP IIIP	969
HP DESK JET	369
OKIDATA 400	599
EPSON LQ 570	274





TONER CARTRIDGES

HP II, III	$79
HP IIP, IIIP, IIID	74

HP MEMORY

1MB	$75
2MB	99
3MB	169

ALL BRANDS OF LAPTOP MEMORY

QTRONICS MINI TRACKBALL $84.95
TRACKBALL $99.95

MICROSOFT COMPATIBLE MOUSE W/SOFTWARE $21.95

USA 386-33

- Intel Microprocessor
- 64K Cache
- 4 MB Ram
- 120 MB Hard Drive
- 1.2 & 1.44 Floppy Drive
- SVGA 14" Color Monitor (CTX .28 Dot Pitch)
- 1 MB ATI Video Card
- 101 Key Keyboard
- Windows 3.1 & Mouse
- Dos 5.0

1 Year Warranty Parts & Labor

$1138

FREE MOUSEPAD

AST 486-33

- Intel Microprocessor
- 256K Cache
- 4 MB Ram
- 120 MB Hard Drive
- 1.2 & 1.44 Floppy Drive
- SVGA 14" Color Monitor (CTX .28 Dot Pitch)
- 1 MB ATI Video Card
- 101 Key Keyboard
- Windows 3.1 & Mouse
- Dos 5.0

1 Year Warranty Parts & Labor

$1699

ASK ABOUT OUR LAPTOP COMPUTERS

REPAIR CENTER
AST • AIR • MAC
PANASONIC
EPSON • HP
IBM
COMPUTERS/PRINTERS/MONITORS

SOFTWARE BLOWOUT!

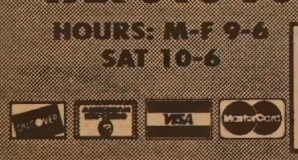
Excel 4.0 for Windows	$289.95
Word 2.0 for Windows	299.95
MicroSoft "Project" for Windows	299.95
Aldus PageMaker Ver. 4.0	499.69
Word Perfect for Windows	229.95
MicroSoft Windows 3.1	89.95
Quatro Pro	349.95

HARDWARE

40/80/120 MB IDE HD	$190/265/299
1.2 & 1.44 Floppy Drive	69/65
1 MB Simm Module	39
Trakker System Backup	479
CTX Super VGA Monitor.28 Dot Pitch	284.95
101 Enhanced Keyboard	49
Colorado Backup Drive 120 MB/250 MB	199/279
CD ROM Drive Sony/Mitsumi	CALL
Multimedia Kit	CALL
Supra Fax Modem 14.4K	319

COVERS • COMPUTER BOOKS • MOUSE
HARDWARE • SOFTWARE • CABLES
ACCESSORIES • MEMORY CHIPS

AMERICAL GROUP
14200 VENTURA BLVD. SHERMAN OAKS, CA 91423
818-906-1132
FAX 818-906-1488
HOURS: M-F 9-6
SAT 10-6



ACCESSORIES AND SUPPLIES

BOTH LOCATIONS

12132 SHERMAN WAY • NORTH HOLLYWOOD, CA 91605 • 1-800-288-8025 • SO. CA: 818-765-3040 • FAX: 818-765-3887

BACKUP TAPES & CARTS DATA CARTRIDGES

Stock No.	Size	3M	SONY
DC600A	60MB	$20.95	$19.90
DC1000	20MB	14.99	n/a
DC2000 THETAMAT Formatted	40MB,3M	22.90	
DC2080	80MB	18.99	18.91
DC120	120MB	21.95	20.79
DC2120 XIMAT Formatted	120MB,3M	31.95	
DC6150	150MB	23.99	22.90
DC6250	250MB	28.95	28.19
DC6320	320MB	29.90	28.90
DC6525	525MB	32.90	31.90

Save up to 2 HOURS on preformatted cartridges

STACKABLE DISK DRAWERS

BD 203 3.5" Drawer, Holds 250	$29.95
BD 205 5.25" Drawer, Holds 300	$29.95

Both measure 13"Wx7.25"Hx14.5"D Same Footprint!

KEYBOARD DRAWERS

UNDER CPU	$24.95

Holds most 101 style keyboards, Keyboard slides away when not in use!

Under CPU/Monitor Drawer Fits under CPU or Monitor	$24.95
Under Desktop Drawer Fits under Desktop	$15.95

STACKABLE DISK CABINETS

Holds 210-300 WD3-Wood 3.5" Drawer, Holds 210	18.95
Measures 14.75"Wx5.25"Hx11"D-3 Drawers	
WD5-Wood 5.25" Drawer, Holds 300	$29.95
Measures 13"Wx7.25"Hx14.5"D-2 Drawers	
POWER PAD	$18.95

Controls up to 5 peripherals with lighted switches & master.

HI-RES MOUSE

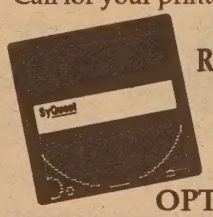
20-6200 dpi resolution software, 3 buttons, teflon feet with optomechanical ball **$29.95**

3 Button Hi Res Mouse w/Software	$29.95
3 Button Hi Res Mouse w/Dr. Halo	35.95
PS/2 Adapter	5.95

PRINTER RIBBONS

Printer Type	Min. 6
Apple Imagewriter II	$1.99
Citizen GSX-40	4.99
Epson LQ-800	4.95
Okidata 192/193	2.69
Panasonic KSP 1524, 1624	5.95
Panasonic KSP 1124	4.65
Star Micro NX-1000	2.94

Call for your printer-100s in stock!



SYQUEST 44/88 MB REMOVABLE CARTRIDGE

$72.95

(qty 3) $69.95/124.95

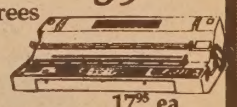
OPTICAL DISKS

650MB	$169.95
CS-600HD	$16.95

Data Cassettes	Maxell	Verbatim
CS-600 HD 60MB	$16.95	$15.95
CS-600 XD 150MB	$17.95	$17.50

MONITOR MOVER

Holds 60lb, 11"x11" platform, 2 screw clamp, swivels 360 degrees **$39.95**



HP PRINTING SUPPLIES

HP DeskJet Cartridge	17.95 ea
HP DeskJet Ink Refills	19.95
Apple StyleWriter Ink Cartridge	19.95
PaintJet XL	25.99
HP 51626A New High Capacity	29.99
PaintJet 51606 Color	26.99
ThinkJet 92261A, 51604A	11.95
HP LaserJet series I 500 & 500 +	79.95
HP Series II, III, IIP	79.95
Pacific Page PostScript	364.95
HP LaserJet III SI Cartridge Model 99291A	129.95
NEW-Recycled GRC HP LaserJet II, IID, III, IIID Cartridges	69.95
With EMPTY Cartridge	63.95
Canon BJI-642 Ink Cartridge for Canon BJI 300-330	28.95
Canon BJ 10E	24.95

IBM/PS VALUE POINT

386SLC™/25MHz

80MB hard drive
2MB Ram
PS/2®8511-VGA
5 slots, 5 bays & mouse
DOS 5.0 pre-installed

$1299

486DX/33 MHz

120/212MB hard drive
8MB Ram
PS/ValuePoint 6312-SVGA NI
5 slots, 5 bays & mouse
OS/2® 2.0 pre-installed

$1999 120MB
$2199 212MB

486SX/25 MHz

80/170MB hard drive
8MB Ram
PS/Valuepoint 6312-SVGA NI
5 slots, 5 bays & mouse
OS/2 2.0 pre-installed

$1629 80MB
$1849 170MB

IBM ThinkPad 700C

Color Notebook
120MB hard drive
1.44MB floppy
4MB Ram
VGA

$3890

Warranty and 30-day guarantee information available from IBM and IBM authorized dealers. Available Monday through Friday in your time zone when serviced by IBM. If parts are required this service is provided after receipt of parts shipped overnight. Applies to IBM direct sales only. IBM prices only. IBM, OS/2 and PS/2 are registered trademarks, and PS/ValuePoint, ThinkPad, HelpWare, and 386SLC are trademarks of International Business Machines Corporation. The Intel Inside logo is a trademark of Intel Corporation.

OKIDATA

Okidata OL400
4 pages per minute speed
300 x 300 dpi
200 sheet paper tray
512K Ram

$590 Including Toner

Okidata OL810
8 pages per minute speed
300 dpi
13 scalable fonts
200 sheet paper tray

$1039 Including Toner

Okidata OL830
8 pages per minute
17 fonts
2MB Ram

$1280 Including Toner

Okidata ML380
24 pin dot matrix
Up to 4 copies + original
240 x 192 cps draft/LQ
Narrow carriage

$259

GET MORE FOR YOUR MONEY

NEC

MULTISYNC MONITORS

Nec 3FGX
15" diagonal 1024x768 resolution
.28mm dot pitch
Non interlaced

$685

Nec 4DS
16" Monitor 1024x768 resolution
.28mm dot pitch
Supports 8514/A, XGA, SVGA
Macintosh compatible

$560

SONY

Multiscan 1604S
17" Monitor 1024x768 resolution
SVGA
.25mm dot pitch

$999

Sony CD ROM & Desktop Library Starter Kit

$459

daytech

"We will beat/match *ANY* advertised price!"

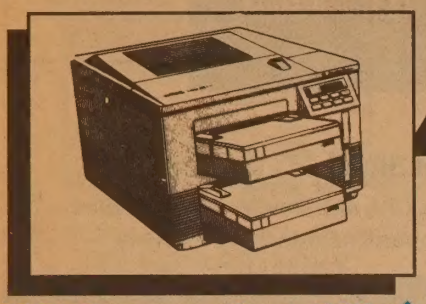
COMPUTER CENTER

6314 Hollywood Blvd. (at Vine), Los Angeles, CA 90028

(213) 463-3001
(800) 447-3331
FAX (213) 469-7255

Free parking in rear with validation. Prices subject to change without notice.

IBM OKIDATA NEC SONY.
Authorized Dealer



HP LaserJet IIIsi

GUARANTEED IN STOCK!

17 pages per minute
5 meg Ram
Appletalk & PostScript
Scalable fonts

HP PLOTTERS

Apply for a FREE 30 Day Evaluation on HP Large Format Plotters

Call For Full Line A-E Demo/New Plotters

CALL
Guaranteed In Stock

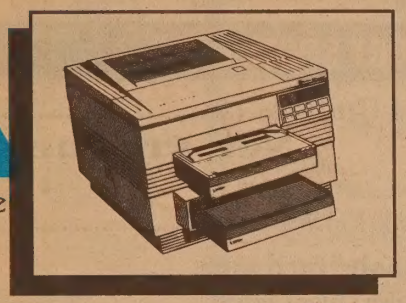
True 600x600dpi
Type library w/45 scalable typefaces
Improved paper handling
2 meg Ram
Software drives built-in

HP LaserJet 4

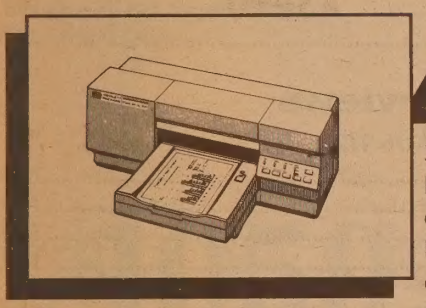
NEW HP LaserJet 4M IN STOCK

CALL

8 pages per minute
2 trays,200 sheets each tray
Resolution enhc.
scalable fonts
1 meg Ram



HP LaserJet IIID



HP PaintJet XL

$1990

300 DPI
Laser quality color output
Parallel & serial or Appletalk HP-GL2 built-in
Brilliant Cad & technical output
Aptron SCO & Ethernet twist available

DESKJET FAMILY

HP DeskJet 500
2 pages per minute
300 dpi
75 sheet tray

$380

$490

HP DeskJet 500C
Black & color printer
Scalable fonts
Letter & legal paper

HP DeskJet Portable
300 dpi
Up to 3 pages per minute
4.4 lbs

$375

FREE DROPSHIP WITH ANY PREPAYMENT

DAV TECH DELIVERS

NETWORK CARDS

(Jet Direct)

J2337A Novell Ethernet Interface — $550

$550 — **J2338A Microsoft LAN Manager & 3 Com 3 + Open/802.3 Interface**

C2059C Novell/Token Ring Interface — $699

$699 — **C2059D Microsoft LAN Manager, IBM Lan Server, and 3 Com 3+ Open/Token Ring Interface**

J2339A AppleTalk Ethernet Interface — $550

$699 — **J2340A HP JetDirect Card for HP-UX**

C2071A Novell/Ethernet & 802.3BNC Interface — $550

$550 — **C2071B Novell Ethernet & 802.3 10 Base-T Interface**

C2071C Microsoft LAN Manager and 3 Com 3+ Open/802.3 BNC Interface — $550

daytech

"We will beat/match *ANY* advertised price!"

COMPUTER CENTER

6314 Hollywood Blvd. (at Vine), Los Angeles, CA 90028

(213) 463-3001
(800) 447-3331
FAX (213) 469-7255

HEWLETT PACKARD
Authorized Dealer and Service Center

Free parking in rear with validation. Prices subject to change without notice.

FEB. 22, 1993 ISSUE #106

MICROTIMES

Editorial (510) 934-3700
Advertising (213) 851-8600 (714) 939-2809

TABLE OF CONTENTS

A NOTE FROM THE EDITORS

Digital communications, a boon to businesses and individuals alike, have brought with them new problems, notably an increase in all sorts of digital snooping and invasive behavior.

Encryption, which seems to be the most likely techno-fix for the problem, is rapidly becoming a standard feature of applications and operating systems. And, as always, with new solutions come new problems.

In this issue, Mitch Kapor discusses email privacy in the wake of Borland vs. Symantec, and we visit cryptography expert Martin Hellman and RSA Data Security President Jim Bidzos for some inside perspectives.

—*ME*

COVER STORY

Encryption & Privacy

Perspectives On Digital Security

Computer Spies 68

By Mitchell Kapor

The implications of the Borland-Symantec electronic mail incident for business.

Encryption, Privacy, And Data Security 55

By Mary Eisenhart

Once the esoteric province of the military and diplomatic communities, encryption is playing an increasingly vital role in digital communications, with applications ranging from secure cellular phones to protection of intellectual property. But, as with all new technologies, encryption is stirring debate as to its proper use.

NEWS AND VIEWS

Letters 12

Industry Insight *By Paul Hoffman* 19

STAC Sues Microsoft 19
Windows NT News 20
MicroTimes Stock Index 26

Realizable Fantasies *By Jim Warren* 29

Public access to public records, continued.

Dvorak's Last Column *By John C. Dvorak* 170

Dvorak discovers the Five Warning Signs of Computer Disease.

BUSINESS SOLUTIONS

Pens And Palmtops *By Mitsu Hadeishi* 33

The GRiD convertible, and other news.

Laptops *By Ed Kahn* 36

Warranty considerations, and IBM's new ThinkPad notebook.

Freestanding Telework Centers *By Robert Moskowitz* 43

Satellite centers, executive centers, and shared office sites as implementations of telecommuting.

Accounting Systems For Small Retailers *By David A. Simon, CPA, and Jennifer Robin Cherniss* 51

Tax and accounting problems and solutions for resellers.

FEATURES

Amiga Does Windows *By Douglas J. Nakakihara* 76

Emulating a 486 on the Amiga.

PRODUCT SPOTLIGHT

Product Updates 90

New Products

Laptop Computer

Amrel 486 Notebook 90

Macintosh Hardware

Macintosh Color Classic 90
Color PowerBook 165c 98
Centris 610 and 650 98
LaserWriter Select Series 98

Macintosh Accessories

Mac DisplayLink 98
NiteCaps 98

Reviews

Games *By Mike Markowitz*

WaxWorks 105
Reading Adventures in Oz 108
Mario Is Missing! 130
Kid Cuts 135

Amiga Software

Charts&Graphs 135

MULTIMEDIA & BEYOND

Multimedia & Beyond 109

The communications revolution that started with desktop publishing is now making graphics, animation, sound, and video integral to business, social, and entertainment-oriented communications. With each issue of *MicroTimes*, Multimedia & Beyond brings you up-to-date information on new products and innovative applications in the digital media field.

What's New With Photoshop *By Tony Reveaux* 112

Adobe Senior Product Marketing Manager (and former *MicroTimes* writer) Steve Guttman gives the inside scoop on Photoshop 2.5.

Clip Media, Copyright, And Consumers *By Matthew Leeds* 122

CD-ROM-based multimedia collections are becoming a mass market—and going through a period of adjustment.

RESOURCES

Calendar Of Events 146

Computer Show—Pomona 146
Apple Enterprise Computing Conference 146

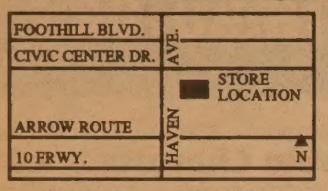
User Group Network 152

This month's BBS spotlight: LA On-line

Classifieds 165

Index Of Advertisers 168

MICROTEK COMPUTERS
RANCHO CUCAMONGA



8325 Haven Ave., #206
RANCHO CUCAMONGA, CA 91730
(714) 483-1687

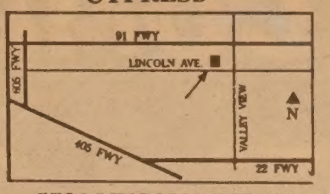
MICROTEK COMPUTERS

Low Price Leader

FINANCING AVAILABLE
BUSINESS LEASING OPPORTUNITIES
Educational Discounts
Dealer Inquiries Invited
PO, Govt, Corp. Welcome
Fax: (714) 761-1336

AUTHORIZED MICROSOFT RESELLER
NOW AVAILABLE WINDOWS 3.1!
Price Subject to
Change w/o Notice
Credit Cards Accepted
Bus. Hrs: Mon-Fri 9-7 & Sat 10-5

MICROTEK COMPUTERS
CYPRESS



5721 LINCOLN AVE. #F
CYPRESS, CA 90630
(714) 761-0315

STARTER SYSTEM
MicroTek 386-40DX w/64K Cache

- AMI Bios
- Real Time Clock/Calendar w/Recharge Battery
- **4Meg RAM Install**
- 80387 Math Co-Processor Socket
- **80Meg Hard Drive**
- 1.2Mb, 5¼" and 1.44Mb, 3½" TEAC Floppy
- IDE 1:1 Dual FD/HD Controller
- AT I/O (2 Serial, Parallel, Game) Ports
- MiniTower or AT Desktop Case w/230Watts Power Supply
- 101 Key Enhanced Keyboard
- SVGA .39DPI Color Monitor
- SVGA 512K Video Card
- **Free Hi-Res Mouse w/Pad**
- Network Certified

$1059
OR
$50/MONTH

HOME/BUSINESS SYSTEM
MicroTek 486-25SX w/64K Cache

- AMI Bios
- Real Time Clock/Calendar w/Recharge Battery
- **4Meg RAM Install**
- Weitek Math Co-Processor Socket
- **120Meg Hard Drive**
- 1.2Mb, 5¼" and 1.44Mb, 3½" TEAC Floppy
- IDE 1:1 Dual FD/HD Controller
- AT I/O (2 Serial, Parallel, Game) Ports
- MiniTower or AT Desktop Case w/230Watts Power Supply
- 101 Key Enhanced Keyboard
- SVGA .28DPI Color Monitor
- SVGA 1Meg Video Card
- **Free Hi-Res Mouse w/Pad**
- Network Certified

$1249
OR
$60/MONTH

ENGINEERING SYSTEM
MicroTek 486-33DX w/256K Cache

- **Intel CPU w/Built-in Math Co-Processor**
- AMI Bios
- Real Time Clock/Calendar w/Recharge Battery
- **4Meg RAM Install**
- **170Meg Hard Drive**
- 1.2Mb, 5¼" and 1.44Mb, 3½" **TEAC Floppy**
- IDE 1:1 Dual FD/HD Controller
- AT I/O (2 Serial, Parallel, Game) Ports
- FullTower w/280Watts Power Supply
- 101 Key Enhanced Keyboard
- SVGA .28DPI **Non-Interlaced** Multisync Monitor
- SVGA 1Meg Video Card
- **Free Hi-Res Mouse w/Pad**
- Network Certified

$1549
OR
$75/MONTH

MicroTek 486-50DX2 w/256K Cache
$1679 OR $85/MONTH

VESA LOCAL BUS SYSTEM
MicroTek VESA Local Bus 486-33DX w/256K Cache

- **Intel CPU w/Built-in Math Co-Processor**
- AMI Bios
- Real Time Clock/Calendar w/Recharge Battery
- **4Meg RAM Install**
- **212Meg Hard Drive**
- 1.2Mb, 5¼" and 1.44Mb, 3½" **TEAC Floppy**
- IDE 1:1 Dual FD/HD Controller
- AT I/O (2 Serial, Parallel, Game) Ports
- FullTower w/**280 Watts** Power Supply
- 101 Key Enhanced Keyboard
- SVGA .28DPI **Non-Interlaced** Multisync Monitor
- Local Bus SVGA 1Meg Video Card
- **Free Hi-Res Mouse w/Pad**
- Network Certified

$1759
OR
$90/MONTH

MicroTek VESA Local Bus 486-50DX2 w/256K Cache $1879 OR $100/MONTH

MEMORY

SIMM
1MEGX3-70ns
$34
SIMM
4MEGX9-70ns
$149

MONITORS

MegaImage .39DPI SVGA 1024X768	$239
Multiscan .28DPI SVGA 1024X768	$279
Shamrock .28DPI SVGA 1024X768	$289
Shamrock .28DPI SVGA 1024X768 Multisync Non-Interlaced	$309
Shamrock 15" SVGA 1280x1024	$499

MOTHERBOARDS

386SX-25MHz w/CPU	$119
386DX-40MHz w/CPU and 64K Cache	$219
486DX-33MHz w/CPU and 256K Cache	$559
486DX2-50MHz w/CPU and 256K Cache	$689
486DX-50MHz w/CPU and 256K Cache	$839
VESA Local Bus 486DX-33MHz w/CPU and 256K Cache	$639
VESA Local Bus 486DX2-50MHz w/CPU and 256K Cache	$769

PRINTERS

HP Deskjet 500	$389
HP Deskjet 500C	$589
HP Deskjet 550C	$699
HP Laserjet IIP w/Toner	$789
HP Laserjet IIIP w/Toner	$989
HP Laserjet IV w/Toner	$1469
Memory Upgrade & Card	CALL

HARD DRIVES

80MEG IDE Hard Drive (17ms)	$229
120MEG IDE Hard Drive (17ms)	$289
170MEG IDE Hard Drive (17ms)	$319
200MEG IDE Hard Drive (15ms)	$389
200MEG SCSI Hard Drive (15ms)	$489
340MEG IDE Hard Drive (13ms)	$649
340MEG SCSI Hard Drive (13ms)	$719

FAX/MODEM

US Robotics 2400 Baud Internal V.42bis	$129
Zoom FC9624 Internal Fax Modem	$99
Zoom FX9624 External Fax Modem	$139
Zoom FC9624 Internal Fax Modem with WinFax for Windows	$169

MICROTEK BASIC SYSTEM

- AMI Bios
- Real Time Clock/Calendar w/Recharge Battery
- **4Meg RAM Install**
- 1.2Mb, 5¼" or 1.44Mb, 3½" **TEAC Floppy**
- IDE 1:1 Dual FD/HD Controller
- AT I/O (2 Serial, Parallel, Game) Ports
- MiniTower **w/230Watts** Power Supply
- 101 Key Enhanced Keyboard
- Operation Manual
- **Network Certified**

MicroTek 386-25SX	$399
MicroTek 386-33SX	$429
MicroTek 386-40DX w/64K Cache	$489
MicroTek 486-25SX w/256K Cache	$589
MicroTek 486-33DX w/256K Cache	$799
MicroTek 486-50DX2 w/256K Cache	$929
MicroTek 486-50DX 2/256K Cache	$1049
MicroTek VESA Local Bus 486-25SX w/256K Cache	$659
MicroTek VESA Local Bus 486-33DX w/256K Cache	$879
MicroTek VESA Local Bus 486-50DX2 w/256K Cache	$999

One Year Warranty on Parts & Labor

COMPUTER WIZ INC.

SERVING YOU FOR 8 YEARS..... & STILL THE BEST!!!

486/33 MHz

- 4MB RAM
- 64K Cache
- Teac 1.2MB 5 1/4" Floppy Drive
- Teac 1.44MB 3 1/2" Floppy Drive
- 200MB Hard Disk(12 Msec)
- 16 Bit VGA Card w/1MB
- 14" Super VGA Color Monitor (1024 x 768 Res)
- 2 Serial, 1 Parallel Ports
- Enhanced 101 Keyboard
- Hi-Res Mouse
- MS DOS 5.0
- 200 Watt UL Power Supply
- Mid Size Tower Case

$1545

386/40MHz

- 4MB RAM
- 64K Cache
- Teac 1.2MB 5 1/4" Floppy Drive
- Teac 1.44MB 3 1/2" Floppy Drive
- 120MB Hard Disk
- 16 Bit VGA Card w/1MB
- 14" Super VGA Color Monitor (1024 x 768 Res)
- 2 Serial, 1 Parallel Ports
- Enhanced 101 Keyboard
- Hi-Res Mouse
- MS DOS 5.0
- 200 Watt UL Power Supply
- Baby Size Desktop Case

$1070

• Limited Availability •

486/50MHz

- 4MB RAM
- 256K Cache
- Teac 1.2MB 5 1/4" Floppy Drive
- Teac 1.44 MB 3 1/2" Floppy Drive
- 200MB Hard Disk(12 Msec)
- 16 Bit VGA Card w/1MB
- 14" Super VGA Color Monitor (1024 x 768 Res)
- 2 Serial, 1 Parallel Ports
- Enhanced 101 Keyboard
- Mouse
- MS DOS 5.0
- 200 Watt UL Power Supply
- Baby Desktop Case

$1720

AST POWER EXEC NOTEBOOK

3/25SL COLOR

83V $2815

163/W...$3165

3/25SL

63V $2109

123/W...$2459

AST PREMIUM EXEC NOTEBOOK 386SX/20MHz

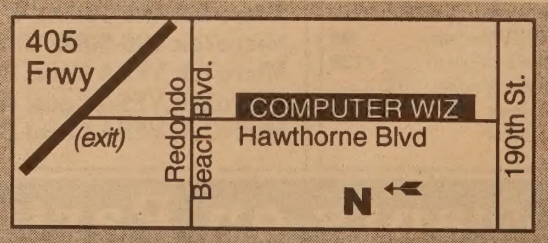
43V $1219

63V $1299

COMPUTER WIZ INC.

Tel (310) 371-6553

18506 Hawthorne Blvd.
Torrance, CA 90504



CONTRIBUTORS

Jennifer Robin Cherniss is a free-lance writer living in Berkeley.

The ubiquitous **John C. Dvorak** has been working on yet another book lately, and doing more bizarre interviews.

Mitsu Hadeishi is the founder of Open Mind, a San Diego-based software company.

Paul Hoffman is an industry analyst who's been writing about microcomputer technology for ten years, and is the author of several books on computer-related topics.

Ed Kahn is a writer and consultant based in the San Fernando Valley.

Mitchell Kapor founded Lotus Development and designed Lotus 1-2-3. He is currently board chairman of the Electronic Frontier Foundation, which he cofounded.

Matthew Leeds works at Brøderbund Software and writes about various Mac-related subjects.

Mike Markowitz works in computer support at a major Southern California university.

Robert Moskowitz is a business consultant based in Woodland Hills. He writes frequently on productivity, office automation, and technology.

Douglas J. Nakakihara is a confirmed Amiga fan who's also a CPA at Sunkist.

Tony Reveaux is the editor of *Computer Publicity News,* a contributing editor for *Artweek,* and the author of the "MediaScan" column in *Film/Tape World.*

David Simon is an Oakland-based CPA.

Jim Warren founded the West Coast Computer Faire and, more recently, chaired the First Conference on Computers, Freedom and Privacy. He is a member of Autodesk's board of directors.

John Wolcott is a Southern California consultant and free-lance writer.

SPECIAL PURCHASE

Baldwin MK-30

COMPLETE EZ-PLAY KEYBOARD PACKAGE

INCLUDING MK-30 PORTABLE KEYBOARD
AND QUALITY POWER ADAPTER
AND STEREO DIGITAL HEADPHONES
AND STURDY PADDED CARRYING CASE

INCLUDES POWER SUPPLY HEADPHONES AND CARRYING CASE.

- 110 preset sounds, grand pianos, orchestras, strings, horns, guitars, bass, synth sounds, percussion and much, much more.
- 49 key full-sized keyboard
- 12 voice polyphony
- 56 automatic drum tracks
- one finger chords
- automatic intros, endings and fills
- headphone outputs
- built-in amp and speaker

ONLY!

A $300 VALUE

$129!

SAVE 58%!

GOODMAN MUSIC

MC, Visa, AX, Optima, Instant Credit

UNIVERSAL CITY (213) 845-1145 or (818) 760-4430
3501 Cahuenga Blvd. West
(Lankershim Exit off Hwd. Fry. turn left)
SHERMAN OAKS (818) 784-6900
4631 Van Nuys Blvd. (2 blocks N. of Ventura Blvd.)
WEST COVINA (818) 967-5767
544 Azusa Ave. (1 block N. of 10 Freeway)
WEST SIDE (310) 558-5500
4204 S. Sepulveda Blvd. (Culver Exit off 405)
ANAHEIM (714) 520-4500
1676 W. Lincoln (Euclid)

CNE AT NIGHT

(AND SATURDAYS TOO!)

If you aspire to be a Novell Certified Netware Engineer (CNE), but have trouble getting time off during the day, Evernet Education Services has the program for you. Evernet is now offering CNE courses in the evening and on Saturdays too!

Our scheduled courses will be conducted in our state of the art classroom with Novell certified instructors to ensure you gain all the knowledge required to pass the certification tests. And the best part is you can take the courses in non-business hours and not upset your boss.

Night classes will be starting soon in the Los Angeles area, so call us today for a free class schedule and more information on how you can get your CNE. Seating is very limited and will be guaranteed on a first serve basis.

Ask about "night school" introductory discount.

CALL TODAY 1-800-447-3658

EVERNET

EDUCATION SERVICES

Los Angeles · San Francisco · Sacramento · · Chicago

Point Of Sale Systems

Scanning ★ Inventory Control ★ Cash Management
Accounting Systems ★ Customer Control

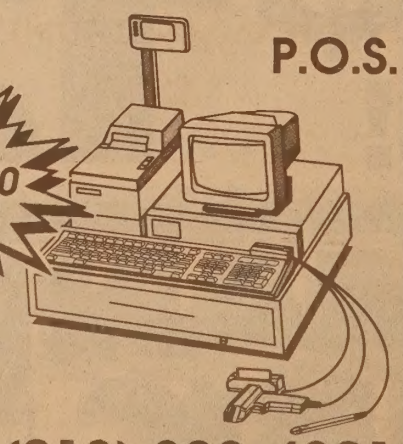
P.O.S.

HARDWARE
Symbol
Metrologic
Ithaca Printers
Citizen
Star
Epson
Indiana Cash Drawer
MS Cash Drawer

SOFTWARE
MicroBiz
Datasym
Bullseye

Lease Under $100 A Month!

CASH REGISTERS
NCR SANYO SHARP
· AUTHORIZED DEALER ·



SO & SO SYSTEMS. INC.
4554 W. Council Street., Los Angeles, CA 90004

(213) 388-4321
Fax: (213) 460-7060

Southern California's Computer Magazine
MICROTIMES

BPA

EDITOR-IN-CHIEF
Dennis Erokan
PUBLISHER
Chuck Stanley
EDITORIAL 510-934-3700
EDITOR Mary Eisenhart
ASSISTANT EDITOR Michael Robin
NEWS EDITOR Paul Hoffman
ART DIRECTOR Lisa Lusk
SENIOR DESIGNER Monika Lukenbill Loar
CONTRIBUTING EDITORS Lenny Bailes, John Perry Barlow, John C. Dvorak, Bennett Falk, Mitsu Hadeishi, Ed Kahn, Matthew Leeds, Mike Markowitz, Brock Meeks, David Morgenstern, Douglas J. Nakakihara, Tony Reveaux, Birrell Walsh, Jim Warren, Wayne A. Yacco
CONTRIBUTING WRITERS Mikael Blaisdell, Anna Couey, Kathleen Creighton, Adam Gaffin, Rich Grace, Peter John Harrison, Fred Lieberman, Woody Liswood, Robert Moskowitz
CONTRIBUTING PHOTOGRAPHERS Jay Blakesberg, Michael Jay, Susana Millman, Ann Summa, Paul Winternitz
ADVERTISING 213-851-8600
DIVISION BUSINESS MANAGER Amy Barrett
SALES MANAGER Cynthia Lapporte (Southern California)
SENIOR ACCOUNT DIRECTOR Barry Green (Northern California)
NATIONAL ACCOUNT DIRECTORS Jane Shepherd (Southern California), Greg Sage (Northern California)
ACCOUNT EXECUTIVES Marty Gillow, Tracy Longo, Ken Marson, Chloe Vezo, Debra Siegel
CLASSIFIED & SUBSCRIPTION MANAGER
Jennifer Kosta (Northern California)
ADVERTISING SERVICES ASSISTANTS
Carolyn Guerrero (Northern California)
Brooke Jonassen (Southern California)
PRODUCTION
GROUP PRODUCTION DIRECTOR Richard Lesovoy
GROUP PRODUCTION MANAGER Mary Beth DeSantis
PRODUCTION ASSISTANT Wendy Sloneker
TRAFFIC ASSISTANT Matt Matuska
ART STAFF Jennifer Bagwell, Donna Bogener, Rick Colby, Hilary Dunn, Gigi Green, Robyn Hartt, Stephen Noetzel, Diane Wallace
CAMERA OPERATOR John Moorehead
PROOFREADER John Downen
TYPESETTING The Typesetting Shop, Inc.
ADMINISTRATION
CONTROLLER Patricia Buck
SENIOR ACCOUNTANT Linda May
ACCOUNTING Joaquin Arellano, Kim Carrington, Vickie Liu, Brian Murray, Bonnie Peterson
CREDIT MANAGER Doug Morgan
HUMAN RESOURCES DIRECTOR Erica Stein-Oakley
L. A. OFFICE MANAGER Deborah Daiken
ADMINISTRATIVE ASSISTANTS Christine Garcia, Monica Murdock
L. A. ADMINISTRATIVE ASSISTANT Jane Sullivan
OFFICE CLERK Leta Jesch
DISTRIBUTION 213-851-8600
DISTRIBUTION MANAGER John Erokan
Assistant Manager/LA Art Holland
DISTRIBUTION ASSISTANT Tami Martin
DISTRIBUTION CLERK Virgil Cecilio
FIELD COORDINATOR Roe Eyth, Frank Grygus
DISTRIBUTION Dennis Anderson, John Clefstad, Roe Eyth, Frank Grygus, Don Karr, Juan Lau, Jac Michanovic, Robbie Myers, Kelly Orr, Joseph Rafalo, Reliable Circulation, John Dimas Rezendes, SPS, Wilfredo Villarroel
FOUNDERS Dennis Erokan, Don Hamilton, Pat Hamilton

BAM PUBLICATIONS, INC.
Dennis Erokan, President
Arthur L. Magnus, Chief Financial Officer

This Vol. 10 No. 3 February 22, 1993, Whole No. 106 MicroTimes, California's Computer Magazine, is published by BAM Publications, Inc., 3470 Buskirk Ave., Pleasant Hill, CA 94523. Phone Advertising Office (510) 934-3700. Los Angeles Office, 6767 Forest Lawn Drive, Suite 110, Los Angeles, CA 90068. Phone (213) 851-8600. San Jose Office, 36 Harold Ave., Suite 2, San Jose, CA 95117. Phone (408) 244-4400. Anaheim Office, 801 East Katella Ave., Suite #210, Anaheim, CA 92805. Phone (714) 939-2809. MicroTimes™is ©1993 by BAM Publications, Inc. Subscription rates: 13 issues, U.S.: 3rd Class $32 (Allow 3 to 4 weeks for delivery), 1st Class $60 Allow 1 to 2 weeks for delivery). MEXICO & CANADA: Surface Mail $50 (Allow 4 weeks for delivery). Air Mail $70 (Allow 1 week for delivery). OVERSEAS: Surface Mail $50 (Allow 6-10 weeks for delivery), Air Mail $165 (Allow 1 week for delivery). To receive sample issues, please send $4 ($6 for overseas) to cover postage costs. Back issues are $6 each. All rights reserved. Reproduction in whole or in part without permission of Publisher is strictly prohibited. The staff and management of MicroTimes do not advocate or encourage the use of any product or service advertised herein for illegal purposes.

PC FACTORY

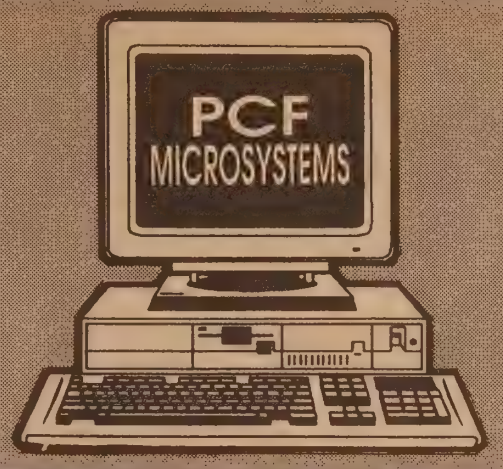
• Simply A Better Choice •

For Your Corporate & Personal Business

intel inside

intel inside

ALL The Power You Can Use



486DX2-66MHz

66MHz DX2 Intel Processor
8MB RAM 256K Cache
5.25" & 3.5" Disk Drive
360MB 12ms IDE Hard Drive
Paradise Windows Accelerator Card
14" SVGA 1024x768, .28DPI
14.4KB Fax/Modem
101KB & DOS 5.0
Windows 3.1 & Mouse
Mid Tower Case w/220W

$2895

486DX2-50MHz

50MHz DX2 Intel Processor
8MB Ram 256K Cache
5.25" & 3.5" Disk Drive
212MB 12ms IDE Hard Drive
Paradise Windows Accelerator
14" SVGA 1024x768, .28DPI
96/24BD Fax/Modem
101KB, DOS 5.0
Windows 3.1 & Mouse
Mid Tower Case W/200W

$2225

386DX-40

40MHzDX AMD Processor
4MB Ram 128K Cache
5.25" & 3.5" Disk Drive
120MB IDE Hard Drive
SVGA Card w/1MB
SVGA 14" Monitor
101 KB, DOS 5.0
Windows 3.1 & Mouse
Mini Tower Case

$1275

386SX-25MHz

25MHz SX Intel Processor
4MB Ram
5.25" & 3.5" Disk Drive
84MB IDE Hard Drive
VGA Card
14" VGA Monitor
101KB, Dos 5.0
Windows 3.1 & Mouse
Mini Tower Case

$1095

486DX-50MHz

50MHz DX Intel Processor
8MB Ram 256K Cache
5.25" & 3.5" Disk Drive
212MB IDE Hard Drive
Paradise Windows Accelerator Card
14" SVGA 1024x768, .28DPI
96/24 Internal Fax Modem
101KB, DOS 5.0
Windows 3.1 & Mouse
Mid Tower Case w/200W

$2295

486DX-33MHz

33MHz DX Intel Processor
4MB RAM 256K Cache
5.25" & 3.5" Disk Drive
170MB IDE Hard Drive
SVGA Card W/1MB Ram
SVGA 14" Monitor 1024x768
96/2400 Internal Fax/Modem
101KB/DOS 5.0
Windows 3.1 & Mouse
Desktop or Mid Tower Case

$1785

TEXAS INSTRUMENTS

TM4000WIN DX 25-J

4MB RAM
120MB HD
3.5FD
Windows 3.1
DOS 5.0
Trackball Mouse

$2825

TEXAS INSTRUMENTS

TM4000 WIN SL

4MB Ram
80HD
3.5FD
Windows 3.1
DOS 5.0
Trackball Mouse

$1985

TEXAS INSTRUMENTS

TM4000 WIN SX 25MHz

4MB RAM
120MB HD
3.5 FD
Windows 3.1
DOS 5.0
Trackball Mouse

$2465

TEXAS INSTRUMENTS

LASERS

MicroLaser PS 17
9PPM, 1.5MB RAM,
17PS Fonts
$1179

MicroLaser Turbo PS 35
9PPM, 2.5MB RAM,
Apple Talk 35PS Fonts
$1525

OKIDATA

OL400
4PPM
512K RAM
17 Fonts, 4 type fonts
$595

OL830
8PPM
2MB RAM
17PS Fonts
$1295

SCO OPEN SYSTEMS SOFTWARE UNIX

EPSON CUSTOMER CARE CENTER

PC FACTORY • 11838 Pico Blvd.
MAJOR CROSS STREET IS BUNDY
Los Angeles, CA. 90064
Hours: M-F; 9-6 & Sat.; 10-4

• SALES & SERVICE •
(310) 444-9003
FAX: (310)444-9608

Letters

RETURN TO THE SOAPBOX: PERSPECTIVES ON VENTURA

In the 1992 Writers' Soapbox Awards (Issue #103), contributing writer Rich Grace announced Ventura Publisher 4.1 for Windows as his choice for Worst Software Release of the Year, with the following comment:

"I really regret having to say this, but Ventura's new dressed-up desktop publishing release is a disaster. Equipped with a snazzy new button bar and greater flexibility in finding and using features, the new Windows-friendly interface omits basic features like stable operation (it barfs every time I run it on an 8MB 486-33) and reasonable start-up time (requiring over two minutes). I hope Ventura releases a maintenance fix *fast*. Right now, this program is a real mess."

Not entirely to our surprise, we received a horrified phone call from Ventura, closely followed by a letter from Ventura vice president Bryan Standley. Mr. Standley's letter, and Rich Grace's response, speak for themselves, and we present them here in the interests of providing our readers with more complete information. We also have features on Windows-based desktop publishing packages, which will obviously include coverage of Ventura, scheduled for Issue #107.

In the meantime, though, we also feel the need to reassert both our commitment to fairness and the nature of the Writers' Soapbox Awards, which are overtly presented as a forum in which our writers are subjective and opinionated. It is reasonable to expect off-the-cuff remarks and various forms of exaggeration, both positive and negative, in that context. It is also a time-honored quality of the Soapbox Awards that writers regularly contradict each other—for example, in the 1991 awards, roughly equal numbers of our contributors awarded "Year's Best" and "Year's Worst" honors to Apple's System 7. The Soapbox Awards are, in a sense, the print counterpart to what you might read online, or what you might hear at your user group.

None of which is to be confused with our formal product reviews, which, though also inextricable from personal opinion and experience, are presented with far greater depth and seriousness.

We think our readers are a fairly bright bunch and capable of understanding the importance of context to a statement. Despite Dvorak's frequent tales of alien programmers, crypto-Nazis, and demonic possession at Microsoft, we have no evidence that our readers make purchase decisions based on such silliness. We will continue to run the annual Awards in all their unabashed and idiosyncratic candor, in the belief that our readers are intelligent and context-sensitive enough to apply the proper filters.

—Mary Eisenhart

We were shocked by *MicroTimes'* "Soapbox Award" by Rich Grace for Ventura Publisher 4.1 [Issue #103]. At the very best, it conflicts with the vast majority of unsolicited opinions by new and existing customers alike, but moreover, it flagrantly abandons the tenets of responsible product journalism and renders unjustified, inflammatory, and damaging statements on the product which are untrue.

First, any software reviewer stating a product opinion is normally understood to be reflecting what they think of the product's quality and usefulness within the scope of its intended purpose under normal operating conditions. It's apparent from Rich's statements and from our follow-up calls to him afterward that he hardly used the product at all.

Second, a proper installation is vital toward any software's successful use and operation. In our calls with Rich we learned that he failed to read the important information listed in both the README file and the installation documentation during installation. We also show no record of his having called our technical support group (whose number is also prominently listed) for assistance.

All software's reliability is dependent on the system environment in which it runs. There are many types of systems and we have tested our software on a wide range of them. Because even similarly named or "identical processor" systems are not in reality all equal, some require specific accommodation. It's part of the nature of PC usage. For those systems we supply additional information (such as above) with Ventura Publisher *and* we provide free 90-day unlimited technical support as a further assurance to all users.

The vast majority of any initial glitches are eliminated by simply following the materials shipped with the product or by making a phone call to us. This is standard operating procedure for our customers, and certainly ought to be utilized by anyone really wanting to use the product.

It goes without saying that published opinions about a product are expected to be based upon reasonable amounts of time and effort put into using the product. Readers come to depend on such opinions to assist them in assessing the viability of the product in the context of their own needs. A "soapbox" format does not change that.

Regarding the opinion about the product not having a "reasonable start-up time," the solution to that is also available in the README file, the installation documentation, and via the free technical support.

To recap all this, had Rich simply followed the instructions supplied, or even bothered to call our support line, he could have been up and running quickly and actually could have reviewed the product. Making sweeping generalizations about a product's viability that has been improperly installed not only does a disservice to your readers, but also does unjustified and unwarranted damage to the reputation of our company and sales of the product.

I would like to ask that you not only publish a retraction of this unjustifiably condemning article, but also to give the product a fair, reasonable evaluation in an upcoming issue as soon as possible. Anything less would be unfair to your readers who use your magazine's information to make buying decisions, and unfair to those of us who have made a great deal of effort in providing a program which is a successful, productive, and reliable tool for desktop publishing *when properly used.*

Bryan Standley
Vice President, Product Management
Ventura Software
San Diego

Rich Grace responds:

To begin with, I certainly understand Mr.

DENNOW Corporation

Computers, Networks, Service
714-474-5488 Corporate Offices

Order Now!

Dennow Corporation continues to bring you high quality components.

We want your business and our Sales and Service staff are ready for your PRE-SALES inquiries.

Call today, Call now, Call DENNOW!

NOTEBOOKS

Built-In AC/DC
Power Adapter
Low Power
Management Functions
Built-In S/R Fax/Modem
w/Software

BULKY AC ADAPTER NOT NEEDED!

No more fears when you forget to bring your notebook's AC power adapter! DENNOW's 486/SLC-25MHz and 386/SXL-25MHz have the adapters built-in. You can also save up to $100 since there is no need to buy more adapters for your home and office usage separately. A car cigarette adapter is included too.

486/SLC-25 MHz

EXCELLENT

$1749

- Math Co-processor Socket on Board
- **4MB** High Speed RAM, Expandable to 4MB
- Built-In **1.44MB**, 3.5" Floppy Drive
- Built-In **120MB** Hard Drive
- Super-Twist Backlit LCD Screen, **64** Gray Scales
- **640x480** VGA Resolution
- **Supports VGA/EGA/CGA**
- Full-Featured, 83 Key Keyboard
- 2 Serial, 1 Parallel Ports
- External Monitor and Keyboard Ports
- Built-In **9600/2400 Fax/Modem**, Send And Receive
- **Built-In AC Power Adapter**
- Car Cigarette Lighter Adapter
- Dimensions: 11.5"x9.5"x2"
- **Weight 6lbs.**, Including Battery
- Complete Package Includes Carrying Bag

386/SXL-25 MHz

$1329

- Math Co-processor Socket on Board
- **2MB** High Speed RAM, Expandable to 4MB
- Built-In **1.44MB**, 3.5" Floppy Drive
- Built-In **80MB** Hard Drive
- Super-Twist Backlit LCD Screen, **32** Gray Scales
- **640x480** VGA Resolution
- **Supports VGA/EGA/CGA**
- Full-Featured, 83 Key Keyboard
- 2 Serial, 1 Parallel Ports
- External Monitor and Keyboard Ports
- Built-In **9600/2400 Fax/Modem**, Send And Receive
- **Built-In AC Power Adapter**
- Car Cigarette Lighter Adapter
- Dimensions: 11.5"x9.5"x2"
- **Weight 6lbs.**, Including Battery
- Complete Package Includes Carrying Bag

Track-ball Mouse w/Driver. $65

Color Notebooks Available!

We set up
DESKTOP COMPUTERS this way...

We use quality assured components.
We combine our machines' performance and your affordability. Our computers can be configured for your particular needs for the present and the future.

The following computer meets hardware and screen performance requirements for Windows applications which are utilized by most users:

DENNOW's Windows Stations

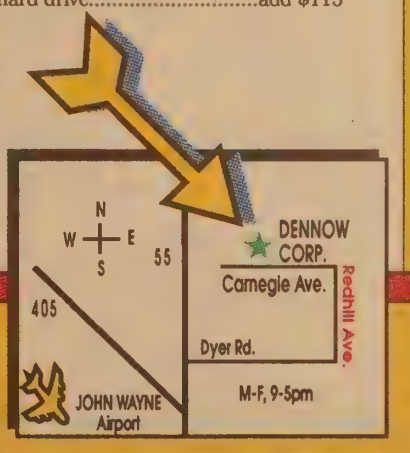
386DX-40MHz

$1290

- **386-40MHz** processor
- Math co-processor socket on board
- **128KB** Cache memory on board
- **4MB** high speed RAM, expandable to 32MB
- **120MB** IDE hard drive
- **1.2MB**, 5.25" floppy drive
- **1.44MB** 3.5" floppy drive
- IDE HD/FD controller
- SVGA Windows accelerator, w/1MB RAM speeds up screen performance 5-10 times faster
- SVGA 14" Monitor, 1024x768, .28mm Dot Pitch
- 2 serial, 1 parallel, 1 game ports
- Desktop case or tower case w/power supply
- 101-key enhanced keyboard, w/hard cover
- MS DOS 5.0, w/manual
- MS Windows 3.1, w/manual
- NORTON DESKTOP for Windows V2.0, w/manual
- Microsoft compatible mouse

Upgrade Options

486DX-33MHz system, 256K Cache.....add $299
486DX-33MHz VESA local bus system.....add $335
486DX-50MHz system, w/256K Cache.....add $529
486DX-50MHz VESA local bus system.....add $620
8MB high speed RAM.....add $138
16MB high speed RAM.....add $429
170MB IDE hard drive.....add $42
200MB IDE hard drive.....add $115
SVGA non-interlaced 14" monitor.....add $46
Award winning 15" SVGA,
1280x1024, .28DPI.....add $334
250MB tape backup, w/tape.....add $285
9600/2400 Fax/Modem,
send and receive.....add $78
680MB CD ROM, w/interface kit.....add $253



1921 Carnegie Ave. Suites 3C & 3D
Santa Ana, CA. 92705

ORDER 714-474-5488
SUPPORT 714-474-5491

CALIFORNIA
Computer
Show
& Sale

LOWEST PRICES
IN THE USA!
PC Compatibles • Hardware
• Software • Accessories

UPCOMING
SHOWS

ANAHEIM
STADIUM—INDOORS
February 27, 1993 • 2000
State College Blvd., Anaheim

CSUN, NORTH
CAMPUS
March 6, 1993 • 18000
Devonshire Blvd., Northridge

GLENDALE CIVIC
AUDITORIUM
March 7, 1993 • 1401
North Verdugo Rd., Glendale

ORANGE COUNTY
FAIRGROUNDS
March 14, 1993 • 88 Fair Drive,
Costa Mesa

CSUN, NORTH
CAMPUS
March 27, 1993 • 18000
Devonshire Blvd., Northridge

GLENDALE CIVIC
AUDITORIUM
April 4, 1993 • 1401
North Verdugo Rd., Glendale

ANAHEIM
STADIUM—INDOORS
April 10, 1993 • 2000
State College Blvd., Anaheim

All Shows from
10a.m. to 4p.m.
Admission: $6.00
Children under 12 FREE
FOR INFO. CALL
1-800-685-1400
BBS: 415-340-9370

$1.00 OFF
Good For All
Of The Above Shows.
Limit 1 discount coupon per person.
Regular Admission $6.00
Copies accepted.

Standley's position regarding my views of Ventura 4.1, and his desire to defend his product. I'll even state that such a brief assessment can be seen as a baseless and superficial attack, and I recognize that. I'll even say that I have made a couple of mistakes.

I strongly feel, however, that my experience with Ventura's current release is deep enough and comprehensive enough that most of my initial arguments are valid. When a corporate executive questions my competence and integrity as a writer I am compelled to respond in a civil but substantive way.

First of all, I am an experienced desktop publisher in the Macintosh and PC environments. I have also written reviews praising previous versions of Ventura Publisher (for an example, please see the June/July '92 issue of PC Home Journal). *Mr. Standley is making claims about my discussions with Ventura tech support which are patently untrue. I made several attempts (not as a writer but as a typical end-user) to contact Ventura tech support for further information, but in all cases was unable to get through. In such a situation it's certain any calls will not be logged.* [Editor's note: A reviewer usually has the vendor's public relations people as a primary contact, which often leads to fast access to tech support. For this reason among others, reviewers frequently call tech support as end-users would, as part of their coverage of the product.]

Second, I spent over twenty hours with the program, testing the button bar functions, templates, file creation and document building, text and graphics importation, and basic menu operations. After reinstalling the program, according to the documentation's specs and the information kindly provided by Ventura's competent and skilled tech support people, I continued to run into problems (though admittely not as frequently).

Third, even after renaming the DOS SHARE.EXE file, changing the width table files, and making all the adjustments suggested, a question comes to mind: Why does a major application require you to jump through hoops just to get it up and running properly? No other program I've ever seen has required me to rename DOS programs that weren't even running in my system! Or, to rename an ENVIRON.WID font width table file, and then laboriously assign that new width table to every style sheet I need to use! It's doable by any competent user, but is still a lot of work. (Please note that startup time was dramatically improved after this process was performed. I am certainly willing to admit where I am wrong!)

Furthermore, while the button bar is a very nice feature, the underlying structure of VP is still the same. It doesn't change the fact that Ventura still doesn't support irregular text wraps (this according to their own tech support!), or that the new "Windows-friendly" version doesn't allow you to place Ventura files as icons in a group, thus enabling you to start the application with that file with a mouse click. VP, unlike most major Windows apps, doesn't support that.

Ventura has been a successful, powerful package for many years. It deserves to stay that way. I'll continue to root for it, and use it. Without a major redesign of its increasingly aging code, however, I'm afraid the competition will catch up. (Tech support also mentioned that VP 4.1's code is still based largely on that from the older DOS versions.)

I also wish to say that I regret this whole incident, and agree that even one mistake, such as the ones I've alluded to, is totally unacceptable. But I do not retract the substance of my statements.

Rich Grace

TELECOMMUTING: THE DARK SIDE

Regarding the article "Working From Home" [first in our series on telecommuting in Business Solutions], I for one do not look at home telecommuting as such a panacea. I foresee the danger of it becoming the cause of a much *more* stressful lifestyle because of the following:

1. It is not realistic to believe that you would be paid for your results rather than your work time. You will be monitored by your employer for time spent in front of the old CRT. As you won't spend two hours a day driving to and from work, your employer will expect that time of you. There go two more hours out of your life that the "company" now owns.

2. You will not be able to escape work by going home. In fact, much of your competition will work from breakfast to bedtime to be more competitive than you. Those with families will suffer an economic hardship because their single competitors will outwork them.

3. The perfection of virtual reality will eventually turn much of the telecommuters into zombie work-oids. They will utilize the VR to aid in sleeping and then "plug in" to work the rest of the day. Their work will eventually not even require physical movement—thoughts will be used in a kind of worldwide human brain interconnected network.

As you can see, the extensions of this technology can evolve into "extreme badness" if you don't put some checks and balances in. Just remember we used to be a a single income family society, and the quality of life was better. Think how bad it will be if we can never escape the workplace. Next they'll try and take away weekends!

Barry Klein
Trabuco Canyon

COMPUTER PACER

1460 MONTEREY PASS RD. #B
MONTEREY PARK, CA 91754

(213) 262-1087

FAX (213) 264-1481

1 YR. WARRANTY PARTS & 2 YR. LABOR

PACER 386-40 SX

- 386-40 MHz SX
- 2 MB Ram Exp to 8 MB
- Mathcoprocessor Socket
- Teac 1.2 High Floppy
- Teac 1.44 High Floppy
- 120 Meg IDE Hard Disk
- Dual Hard Floppy Ctrl
- 2 Serial, Parallel, Game
- Vertical or Desktop
- 230 Watt Power Supply
- Super Hi Res VGA Graphic 1024 x 768
- 14" Super VGA .28 Color Monitor 1024 x 768
- 101 Enhanced keyboard w/Dust Cover
- 880 DPI Serial Mouse w/ Mouse Pad Pocket

ONLY $939
COMPLETE

PACER 386-40

- 128K Cache, US Made
- 4MB Ram, AMD
- Expandable to 32 MB
- Teac 1.2 High Floppy
- Teac 1.44 High Floppy
- 124 Meg IDE Hard Disk
- Dual Hard Floppy Ctrl
- 2 Serial, Parallel, Game
- Vertical or Desktop
- 230 Watt Power Supply, Dual Fan
- Super Hi Color 32,000
- One Meg Super VGA Card
- 14" Super VGA Color Monitor 1024 x 768 .28 DPI
- 101 Enhanced keyboard w/Dust Cover
- 880 DPI Serial Mouse w/ Mouse Pad Pocket

ONLY $1169
COMPLETE

PACER 486-33

- 256K Cache, US Made
- 4 MB Ram, Exp to 32 MB
- Built-in Mathcoprocessor
- Teac 1.2 High Floppy
- Teac 1.44 High Floppy
- 170 Meg IDE Hard Disk
- Dual Hard Floppy Ctrl
- 2 Serial, Parallel, Game
- Vertical or Desktop
- 230 Watt Power Supply
- Super Hi Color 32,000
- One Meg Super VGA Card
- 14" Non Interlaced SVGA Color Monitor 1024 x 768 .28
- 101 Enhanced Keyboard w/Dust Cover
- 880 DPI Serial Mouse w/ Mouse Pad Pocket

SPECIAL BUY

ONLY $1369
COMPLETE

PACER 486-33 DX LOCAL BUS

- 256K Cache, US Made
- 4 MB Ram, Exp to 32 MB
- Built-in Mathcoprocessor
- Teac 1.2 High Floppy
- Teac 1.44 High Floppy
- 170 Meg IDE Hard Disk
- Dual Hard Floppy Ctrl
- 2 Serial, Parallel, Game
- Vertical or Desktop
- 230 Watt Power Supply
- Super Hi Color 32,000
- One Meg Super VGA Card
- 14" Non Interlaced SVGA Color Monitor 1024 x 768 .28
- 101 Enhanced Keyboard w/Dust Cover
- 880 DPI Serial Mouse w/ Mouse Pad Pocket

Only $1595
COMPLETE

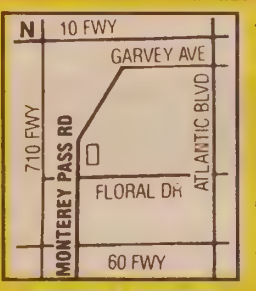
PACER 486-50 DX

- 256K Cache, US Made
- 4 MB Ram, Intel CPU
- Expandable to 32 MB
- Teac 1.2 High Floppy
- Teac 1.44 High Floppy
- 170 Meg IDE Hard Disk
- Dual Hard Floppy Ctrl
- 2 Serial, Parallel, Game
- Vertical or Desktop
- 285 Watt Power Supply, Dual Fan
- Super Hi Color 32,000
- One Meg Super VGA Card
- 14" Non Interlaced SVGA Color Monitor 1024 x 768 .28
- 101 Enhanced Keyboard w/Dust Cover
- 880 DPI Serial Mouse w/ Mouse Pad Pocket

Only $1769
COMPLETE

- RELIABLE PRODUCTS
- FRIENDLY SERVICE
- GREAT SERVICE

24 HOURS OPEN TO FAX YOUR QUOTE!!!



VISA MasterCard

WE ACCEPT GOVERNMENT & UNIVERSITY PURCHASE ORDERS

TERMS: C.O.D. cash, Company & University PO's on approval.
All returns must have an RMA number. Prices do not include shipping. Prices subject to change without notice. Listed names of products are registered tradmarks of their respective companies.
Pacer USA is a trademark of Power Tech Harrington, Inc.

PACER 486-66

- 256K Cache, US Made
- 8MB Ram,Intel CPU
- Expandable to 32MB
- Teac1.2 High Floppy
- Teac1.44 High Floppy
- 240 Meg IDE Hard Disk
- Dual Hard Floppy Ctrl
- 2 Serial, Parallel, Game
- Vertical or Desktop
- 285 Watt Power Supply, Dual Fan
- Diamond SpeedStar Graphic w/One Meg Memory
- 15" Non Interlaced Monitor SVGA Flat Screen Color
- 130 Programmable Enhanced Keyboard w/Calculator
- 880 DPI Serial Mouse Mouse Pad Pocket

SPECIAL BUY

ONLY $2369
COMPLETE

PERIPHERALS

9600 Fax/2400 Int Modem	$69
2400 Internal Modem	45
Vertical/Desktop Case w/PS	69
NCR Graphic Accelerator w/2Meg	159
Pacer 101 Keyboard w/Hard Top w/Pamphlet	49
CD ROM w/Software Package	299
External CD ROM	289

NEW SERVICE DEPARTMENT MONITOR AND COMPUTER REPAIR CENTER LOWEST RATES

SPECIAL THANKS FOR USING OUR COMPUTER SYSTEMS

- CITY OF MONTEREY PARK
- COUNTY OF LOS ANGELES
- DEPARTMENT OF WATER & POWER
- MONROVIA FIRE DEPARTMENT
- NBC • U.S.C.
- WORLD ELECTRONIC NETWORK
- XEROX • U.S. NAVY

CUSTOM CONFIGURATIONS AVAILABLE

5 REASONS THAT MAKE PACER U.S.A. COMPUTER SYSTEMS SUCCESSFUL:

POWER & PERFORMANCE OF PACER USA SYSTEMS

ASSURANCE TO OUR CUSTOMERS

COMMITMENT TO BEING THE BEST

EXCELLENCE IN EVERYTHING WE DO

RELIABILITY BEHIND OUR WORK

Extra at NO COST!

72 HOURS BURN-IN TEST
ALL SYSTEMS CARRY ONE YEAR PARTS & 2 YEARS LABOR
SPECIAL DISCOUNT PRICES ON SYSTEMS PURCHASE
LIFETIME TECHNICAL SUPPORT

WHAT'S NEW FOR BINARY?

1. Two too many technicians in staff: Instead of promising you good service when we cut a purchase order, we show it to you! You will see at our tech. rooms that we keep two too many technicians in line to provide you prompt and courteous service when you need it.
2. We do upgrade for your existing system for a larger capacity hard disk, more RAM or speed up your performance.
3. Only minimum service charge will apply to existing Binary customer for upgrade and out of warranty service.

MONTHLY SPECIAL
While Inventory Last!

- Colorado 120 MB Tape Back-up w/o Cartridge **$160**
- Colorado 250 MB Tape Back-up w/o Cartridge **$230**
- Turn you 286 or 386 System into a Speed Screamer:

BINARY 486VL-33 UPGRADE PACKAGE:

- 486-33 Vesa Local Bus Mother Board
- Intel 486-33 CPU, 128 KB Cache
- 4 MB RAM
- VESA Local Bus Genoa Super VGA Card (32 Bit, Hi-Color)
- VESA IDE Hard Disk Controller Card (32 Bits) **$825**

BINARY 386 SX-33 MHz

- 4 MB RAM (Exp. to 32 MB)
- 2 Serial / 1 Parallel / 1 Game Port
- TEAC 5-1/4" Floppy Drive
- TEAC 3-1/2" Floppy Drive
- VGA Monitor
- VGA Graphic Color Card
- 80 MB Hard Disk (17 MS)
- Desktop Case w/Small Footprint but Full Expandability
- Full Size AT Enhanced Keyboard

$995

FREE: *Logitech High Res. Mouse*
2400 Baud Rate Modem

BINARY 386 DX-40 MHz

- 4 MB RAM (Exp. to 32 MB)
- 2 Serial / 1 Parallel / 1 Game Port
- TEAC 5-1/4" Floppy Drive
- TEAC 3-1/2" Floppy Drive
- Super VGA Monitor (1024 x 768, .28 mm, Oversizing)
- Super VGA Card with Windows Accelerator (1 MB RAM, 1024 x 768)
- 170 MB Hard Disk (15 MS)
- Mid-Size Tower Case
- AT Enhanced Keyboard

$1250

FREE: *Logitech High Res. Mouse*
2400 Baud Rate Modem

PERIPHERALS & UPGRADES

MONITOR

14" Super VGA (1024 x 768, .28 mm), Over Sizing	$275
14" Super VGA (Non-Int., .28 mm), Over Sizing	$315
15" Flat VGA (Non-Int., .28 mm), Auto Sizing	$465
15" NEC 3FG (1024 x 768)	$665
15" NEC 4FG (1024 x 768)	$785
17" NEC 5FG (1280 x 1024)	$1385
17" SCEPTRE	$920
20" HITACHI (1280 x 1024) w/o Cable	$1395

MODEM / FAX MODEM

2400 BPS Modem	$38
9600/2400 FAX/Modem	$58
14,400/14,400 FAX/Modem (v. 42 BIS & MNP 5, FAX for Windows incl.)	$210

FLOPPY & HARD DISK

TEAC 1.2 MB, 5-1/4" Floppy	$58
TEAC 1.44 MB, 3-1/2" Floppy	$55
80 MB Hard Disk (W.D. 17 MS)	$220
120 MB Hard Disk (Maxtor, 17 MS)	$250
170 MB Hard Disk (Connor, 17 MS)	$280
210 MB Hard Disk (Maxtor, 15 MS)	$380
340 MB Hard Disk (Maxtor, 15 MS)	$680

SYSTEM Upgrade To:

386SX - 33MHz, 64 KB Cache, 4 MB RAM	$295
386SX - 40MHz, 64 KB Cache, 4 MB RAM	$360
486SX - 33MHz, 64 KB Cache, 4 MB RAM	$620
486SX - 33MHz, VESA Local 128 KB Cache, 4 MB RAM	$670
80 MB (Connor), IDE, 17 MS	$210
170 MB (Connor), IDE, 15 MS	$295
210 MB (Maxtor), IDE, 15 MS	$350
250 MB (Connor), IDE, 15 MS	$375

Binary Group

WHAT'S NEW FOR BINARY SYSTEMS?

1. Binary offers all 486VL systems with one 32 bit VGA controller and one 32 bit IDE hard disk controller, both running at CPU clock speed, to remove the bottle-neck of CAD/CAM and windows through-put.
2. We offer all system purchase with one Free Logitech high resolution mouse for ease of use and one Free 2400 Baud Rate Modem for easy to access our technical support.
3. All monitors are capable of doing over-sizing so that you can enjoy the full screen display.
4. We enforce the double and tripple check procedure in quality control to ensure the production of flawless systems.

BINARY 486 ISA-33 MHz

- Intel 486 - 33 MHz CPU
- 4 MB RAM w/ 64 KB Cache
- 2 Serial / 1 Parallel / 1 Game Port
- TEAC 5-1/4" Floppy Drive
- TEAC 3-1/2" Floppy Drive
- 170 MB Hard Disk (15 MS)
- Super VGA Monitor (1024 x 768, .28 mm, Oversizing)
- Super VGA Card with Windows Accelerator (1 MB RAM, 1024 x 768)
- Mid-Size Tower Case
- AT Enhanced Keyboard

$1495

FREE: *Logitech High Res. Mouse*
2400 Baud Rate Modem

BINARY 486 VL-33 MHz

- VESA Local Bus Mother Board
- Intel 486 DX-33 CPU
- 4 MB RAM w/ 128 KB Cache (Exp. to 32 MB w/ 256 KB)
- 2 Serial / 1 Parallel / 1 Game
- TEAC 1.2 MB Floppy (5-1/4")
- TEAC 1.44 MB Floppy (3-1/2")
- Super VGA Monitor (1024 x 768, .28 mm)
- **170 MB Hard Disk w/Local Bus IDE (32 Bit)**
- Mid-Size Tower Case
- Full Size AT Enhanced Keyboard
- **Genoa VESA Local Bus VGA Card (32 Bit)**

$1650

FREE: *Logitech High Res. Mouse*
2400 Baud Rate Modem

BINARY 486 VL-50 MHz

- VESA Local Bus Mother Board
- Intel 486 DX-50 CPU
- 4 MB RAM w/ 128 KB Cache (Exp. to 32 MB w/ 256 KB)
- 2 Serial / 1 Parallel / 1 Game
- TEAC 1.2 MB Floppy (5-1/4")
- TEAC 1.44 MB Floppy (3-1/2")
- Super VGA Monitor (1024 x 768, .28 mm)
- **170 MB Hard Disk w/Local Bus IDE (32 Bit)**
- Mid-Size Tower Case
- Full Size AT Enhanced Keyboard
- **Genoa VESA Local Bus VGA Card (32 Bit)**

$1875

FREE: *Logitech High Res. Mouse*
2400 Baud Rate Modem

SOUND ♦ CD ♦ MULTIMEDIA

SOUND / VIDEO

Sound Blaster Pro	$160
Sound Blaster Pro 16	$199
Media Vision Pro Audio-16	$210
Video Blaster w/Video for Windows (Editing Soft)	$360

CD

Mitsumi, 350 MS, 32 KB, Int. w/Interface	$235
Sony 535 I, 340 MS, 8 KB, Int. w/Interface	$320
Sony 535 E, 340 MS, 8 KB, Ext. w/Interface	$370
Sony 541 I, 380 MS, 64 KB, SCSI	$370
NEC CDR-84, 280 MS, 64 KB	$550

MULTIMEDIA PC

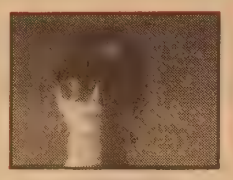
Certified Multimedia PC: *(New Release)*

Sound Blaster Pro, CD-ROM (Fast Transfer Rate, Exceed MPC Spec.), Windows 3.1 on Disc, MS-Bookself for CD-ROM: Atlas, Encycl., Dictionary, MS-Works for Windows, MicroMind for Multimedia Presentations, Author ware Star for Multimedia Authoring, Tempa for Graphics and Presentation, Sherlock Holmes Game

$570

Inc.

15061 Springdale St., Unit 107-108 • Huntington Beach, CA 92649
Tel: **(714) 894-6827** • Fax: (714) 894-0196
Hours: Mon-Fri 9:00 - 5:30 • Saturday 10:00 - 4:00



★★HAPPY NEW YEAR!★★

We Will Beat Any System Price In Any Magazine.

Top Savings, Top Quality, Top Computer

WHOLESALE TO THE PUBLIC • FREE SOFTWARE

	Cash Price	Regular Price
386SX-33 MHz	$650.	$665.
386DX-40 MHz/64K	$710.	$730.
486SX-25 MHz	$795.	$820.
486DX-33 MHz/64K	$965.	$980.

- 1MB RAM Installed
- 85MB IDE Hard Disk Drive
- 1.2 or 1.44MB Floppy Drive
- Dual F/H IDE Controller
- 101 Enhanced Keyboard
- Desktop or Mini-Tower Case
- UL Power Supply
- VGA Graphic Card
- 14" VGA Monitor
- 1 Year Warranty Parts & 10 Years Labor
- 72 Hour Burn-In Test

FREE
High resolution Mouse with This Month Special

UNBELIEVABLE ROCK BOTTOM PRICES!!

NEW!
486DLC-33MHz (Cyrix)
$415/$430
Cash Reg.

NEW!
486DX2-66MHz
$775/$795
Cash Reg.

386SX-33MHz
$240/$250
Cash Reg.

386DX-40 MHz (w/64 Cache)
$295/$305
Cash Reg.

SYSTEM INCLUDES:
- Mini Tower or Desktop Case
- UL Power Supply
- 1 MB Ram Installed
- 1.2MB or 1.44MB Floppy Disk Drive • 72 Hour Burn-In
- Dual FDD & HDD Controller Card (1: 1)
- 2 Serial/1 Parallel/1 Game Port
- Realtime Clocks & Calendar
- 101 Enhanced Keyboard
- 1 Year Warranty Parts
- 10 YEAR LABOR WARRANTY

486SX-25 MHz
$395/$415
Cash Reg.

486DX-33 MHz (w/256 Cache)
$555/$570
Cash Reg.

486DX2-50 MHz (w/256 Cache)
$675/$695
Cash Reg.

486DX-50 MHz (w/256 Cache)
$745/$770
Cash Reg.

Monitor & Graphic Card Bundles

MONO AMBER
- 14"Mono w/MGP Card $90

COLOR
- 17"Color Monitor Special (.26) $845
- 14"VGA Color w/VGA Card $195
- 14"SVGA Color w/SVGA Card $245
- 14"Non Interlaced SVGA Color w/SVGA Card $320

Quality Hard Disk Drives

- 40MB IDE $140
- 85MB IDE $190
- 105MB IDE $205
- 130MB IDE $230
- 170MB IDE $270
- 210MB IDE $335
- 250MB IDE $345
- 340MB IDE $545

VESA LOCAL BUS 486DX-33MHz
- 1MB RAM
- 256K Cache
- 85MB HDD
- 1.2 or 1.44 MB FDD
- Local Bus IDE Controller
- ET 4000 Local Bus Card
- 101 Keyboard
- 14" SVGA Monitor
- Desktop or Mini Tower
- UL Power Supply

$1,295

Upgrades

- 1 MB RAM to 2MB ..... add $35
- 1 MB RAM to 4MB ..... add $40
- 2 MB RAM to 4MB ..... add $60
- 1 MB SIMM $30
- 4 MB SIMM ..... $CALL
- 1.2 MB FDD ..... add $49
- 1.44 MB FDD ..... add $45

Modem & Parts

- High Resolution Mouse $10
- Mouse w/Windows 3.1 $45
- Pen Mouse ..... $Call
- 250MB Tape Drive $195
- Trackball Mouse $45
- 2400 Internal Modem .. $28
- 2400 Toshiba Laptop Modem $105
- Fax Modem $48

Notebook

Limited Quantity Hurry!!

TOP SPECIAL NOTEBOOK 386SX-20 MHz w/VGA
- 2 MB RAM
- 1.44MB Floppy Drive
- 80MB Hard Drive
- 640x480 VGA LCD
- DR DOS 6.0
- FCC Class B

$995 • More Notebooks Available!

1200Dpi Color Scanner
$795 (full page)

Laser Maser Winjet 800
$695

800Dpi for HP Laser printer

Winjet 1200 $745

1200 Dpi for HP4 600 Dpi

Networking Available
SINCE 1987

TOP Computer

Printers

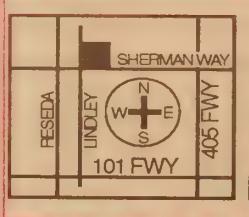
- Panasonic 1124i $280
- Panasonic 1123 ..... $195
- Epson EPL 1000 ..... $635
- Epson LQ570 ..... $245
- Epson EPL 7000 ..... $779
- OKI Laser 400 ..... $575
- Citizen Color Printer $295
- Brother HL-10V 10 pm .... CALL
- Daisy Wheel Cardco LQ/3 $65
- HP LaserJet 4 ..... CALL
- HP IIP Plus ..... CALL
- HPIIIp ..... CALL
- HP Deskjet 500C $495
- Star NX 1001 ..... $139

Mon-Fri 9:00-7:00 pm
Sat 10:00-6:00 pm

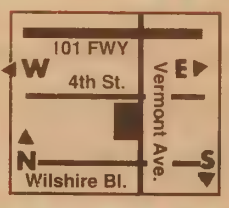
1-800-690-0006

Limited Quanity!
Prices subject to change without notice.
Payment Terms Available

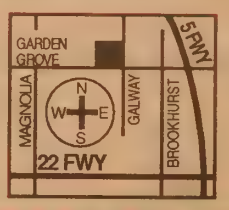
VISA MasterCard DISCOVER



18040 Sherman Way
Suite #105
Reseda, CA 91335
(818) 757-0222
Fax: (818) 757-0808



401 Vermont Avenue
Suite #5 & #6
Los Angeles, CA 90020
(213) 384-6601
Fax: (213) 384-6713



9681 Garden Grove Blvd.
Suite #103
Garden Grove, CA 92644
(714) 534-4523
Fax: (714) 534-5412

TOP COMPUTER SYSTEMS • SEOUL, KOREA • TEL. (0345) 83-0515

INDUSTRY INSIGHT

Microsoft: Yet Another Lawsuit; Good News/Bad News For Windows NT STAC Sues Microsoft For Patent Infringement

BY PAUL HOFFMAN

Among the badly kept secrets of the microcomputer industry, the features of upcoming operating systems are a common subject of discussion. It's already widely reported, for instance, that MS-DOS v6 will have many new features commonly found in utility programs, such as virus protection. One of the most useful new features expected in MS-DOS v6 is disk compression that will generally double the amount of information you can store on your hard drive.

The microcomputer industry is more familiar with copyright lawsuits than with patent suits (some would say that the industry is all too familiar with both).

Copyright © 1993 by Paul Hoffman. All rights reserved. *Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on Internet (phoffman @well) or CompuServe (71545,346). He also writes popular microcomputer books.*

STAC Electronics is probably the best known manufacturer of hardware and software for compressing data on hard disks. Its Stacker program is one of the best-selling utilities for the PC, with almost a million users. Further, STAC licenses its technology to many of its competitors, and claims over four million users of programs utilizing STAC licensed technology.

STAC recently sued Microsoft for patent infringement for the technology Microsoft is using in the beta test versions of MS-DOS. STAC claims that Microsoft had previously wanted a free license from STAC, but went ahead and included the data compression portion of MS-DOS v6 without a license. At press time, Microsoft has denied infringing but has not responded to the lawsuit, although an official denial is expected.

The microcomputer industry is more familiar with copyright lawsuits than with patent suits (some would say that the industry is all too familiar with both). The laws for patents are very different from those for copyright, although the end result is the same: protection from copying. For STAC to be successful in its suit against Microsoft, it will have to prove many things; if it loses the lawsuit, it also risks losing its patents, which could be devastating for the company. Clearly, Microsoft's inclusion of disk compression in MS-DOS v6 has scared STAC enough to make it take this very risky step.

Microsoft can win the suit in many different ways. The two most common ways to defend yourself against charges of patent infringement are to either show that the thing you're doing doesn't relate to the patent, or to show that the patent should never have been granted in the first place. It is likely that Microsoft will use both strategies in its defense.

STAC is basing its lawsuit on two patents, called the "009" and the "745" patents, after the last three digits in the patent numbers. If Microsoft can show that the data compression it uses is even slightly different from what's described in the "009" and "745" patents, it can win the suit easily. Therefore, those patents must be sufficiently broad for STAC to prove that the compression method used by Microsoft infringes. If the patent is too narrow, Microsoft can easily show that it is not infringing, or simply change its current method to one that doesn't infringe.

Having a broad patent is no panacea, however. The broader the patent, the easier it is to get the patent invalidated. In order to get a patent, you must prove that the method you are patenting has not been used before. The narrower the patent, the less likely the previous use; the broader the patent, the easier it is to find examples of previous use that predate the patent. Thus, if STAC's "009" and "745" patents are very broad, Microsoft can win its case by getting the patents invalidated. Such an action would also probably ruin STAC, since its licensing fees are based on its ownership of those patents.

This is the most important difference between copyright and patent law. It is very difficult to lose the copyright on something you created, but it is common in patent lawsuits to actually lose the patent. Just because someone in the US Patent Office decided that your patent application was valid, this is not definitive. Patent lawyers commonly find examples of patented methods in the industry literature, and thereby invalidate patents in court.

Many other facts are in dispute in the case.

Microsoft has publicly claimed that STAC has "never given any indication that they had any problems with us." In the STAC lawsuit, however, STAC claims a progression of meetings in which they and Microsoft tried to negotiate an agreement. STAC says that Microsoft would not pay any royalty on the patents, however.

It is likely that STAC's view of the negotiations are closer to reality than Microsoft's, but it isn't clear whether that will be at all important to the court in deciding whether or not there was an infringement of the patents or whether the patents are even valid.

WINDOWS NT NEWS

Amid rumors that Windows NT is running behind its already delayed schedule, Microsoft has insisted that it's not backing down from the commitment to create a full-featured advanced operating system that will compete with, and possibly supplant, UNIX.

While the rumors may just be more of the Microsoft-bashing that seems to be common among users and competitors, many developers have noted that there are still big holes in the beta test copies they have received.

Microsoft made a big deal about IBM's failure to fully meet its goals when releasing OS/2 v2 last year, but now it will probably have to accept the same derision.

Further, the holes are in areas that are difficult to test, such as networking; therefore Microsoft will be taking big risks by releasing Windows NT without having had full betas being out for a few months. The current schedule is for Windows NT to be released commercially in June.

Microsoft made a big deal about IBM's failure to fully meet its goals when releasing OS/2 v2 last year, but now it will probably have to accept the same derision. Further, OS/2 is still doing acceptably in sales and in commitments from major IBM clients. Although Windows NT has many developers promising to write for it, so did OS/2 v2 before it was released. Microsoft may be just as embarrassed as IBM was about how few packages really need to run under its operating system, and how many companies are just as happy to write for Windows 3.1 and assume that the programs will run acceptably under OS/2 or Windows NT.

Novell, which recently bought the rights to the UNIX operating system, is putting a lot of pressure on Microsoft on many fronts. Last month, Novell previewed the next version of NetWare, which has many networking features that are not expected in the first version of Windows NT. For example, NetWare v4 will have vastly expanded directory services that make setting up new users on the network much easier than in the current versions. This

continued on page 24

ORANGE COUNTY'S LOW PRICE LEADER
FACTORY DIRECT PRICES

286-12 BAREBONES — $285
- Mini Tower Case
- 220W Power Supply
- 1.2 Or 1.4MB Floppy Drive
- 101 Keyboard
- Clock/Calendar
- 2 Serial Ports/1 Printer Port
- 1MB RAM

386DX-40 BAREBONES — $425
- Mini Tower Case
- 220W Power Supply
- 1.2 Or 1.4MB Floppy Drive
- 101 Keyboard
- Clock/Calendar
- 2 Serial Ports/1 Printer Port
- 1MB RAM

486DX-33 BAREBONES — $800
- Mini Tower Case
- 220W Power Supply
- 1.2 Or 1.4MB Floppy Drive
- 101 Keyboard
- Clock/Calendar
- 2 Serial Ports/1 Printer Port
- 1MB RAM

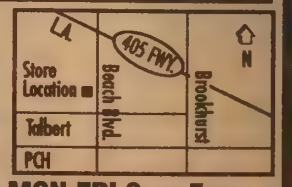
386SX-25MHz — $675
- Mini Tower Case
- 25MHz 386SX MB w/1MB RAM Exp. to 16MB
- 220 W Power Supply
- 1.2 & 1.4MB Floppy Drives
- 80387 Math Co-Processor Socket
- 101 Key Enhanced Keyboard
- Real Time Clock/Calendar
- 2 Serial Ports/1 Printer Port/Game
- SVGA Color Monitor w/16 Bit Card

386DX-40MHz w/64K Cache — $765
- Mini Tower Case
- 40MHz 386DX MB w/1MB RAM Exp. to 16MB
- 220 W Power Supply
- 1.2 & 1.4MB Floppy Drives
- 80387 Math Co-Processor Socket
- 101 Key Enhanced Keyboard
- Real Time Clock/Calendar
- 2 Serial Ports/1 Printer Port/Game
- SVGA Color Monitor w/16 Bit Card

486DX-33MHz w/64K Cache — $1100
- Mini Tower Case
- 33MHz 486MB w/1MB RAM Exp. to 64MB
- 220 W Power Supply
- 1.2 & 1.4MB Floppy Drives
- Math Co-Processor
- 101 Key Enhanced Keyboard
- Real Time Clock/Calendar
- 2 Serial Ports/1 Printer Port/Game
- SVGA Color Monitor w/16 Bit Card

COMPUTER SUPPLIES UNLIMITED, INC.
714-841-3393
FAX: 714-841-8926 • SERVING YOU SINCE 1983

17931 Beach Blvd., Suite 110 • Huntington Beach, CA 92647
Near NW Corner Beach & Talbert • Look for our sign : COMPUTERS



Bus. Hours: MON-FRI 9am-5pm

RESOURCE INFORMATION SYSTEMS

Hardware ■ Software ■ Service ■ Rentals

QUALITY SALES AND SERVICE SINCE 1986

7500 SQ. FT. Factory With Showroom ■ Member Of The Better Business Bureau

All Systems Include a 5 Year Warranty

See Extended Hardware Warranty Service Agreement For Details

386SX-33	$290
386-33 DX / 40 DX	355 / 360
486-33 DX / 66 DX2	660 / 970
486-50 DX / 50 DX2	885 / 810
486-33 DX Local Bus	680
486-50 DX Local Bus	895
486-66 DX2 Local Bus	990
Upgrade 486 to EISA	Add 150

Basic System Configuration Includes:

- Intel or AMD CPU
- Shadow RAM for remapping System and Video BIOS
- 200+ Watt Power Supply
- 1 to 1 IDE Controller
- NMB 101 Key Keyboard
- 2 Serial, 1 Parallel, 1 Game Port
- Built-in Setup
- AMI BIOS
- Mini Tower Case
- 1 Meg of Ram Memory
- Teac 1.44 MB 3 1/2" Floppy
- 8 Expansion Slots and Math Co-Processor Socket
- Real Time Clock and Calendar w/ Battery Backup

All RIS Computers Are 100% IBM Compatible, Custom Built, And Burned-In For 48 Hours To Assure Reliability

NOVELL

Netware 3.11 & 2.2	CALL
Netware Upgrades	CALL
NE 2000 Ethernet Card	135
Intel Ether Express 16TP	125
SMC Ethercard Plus Elite 16TP	135
SMC Concentrator 8 Port Hub	325
HP Ethertwist 16TP Lan Card	200
Installation/Maintenance	CALL

Memory

256K SIMM - 80 (3 Chip)	10
1 Meg SIMM - 70 (3 Chip)	29
1 Meg SIMM - 70 (9 Chip)	33
4 Meg SIMM - 70 (9 Chip)	125
4 Meg SIMM - 60 (9 Chip)	139

Hard Drives

Seagate 42 MB IDE	160
Western Digital 85 MB IDE	210
Seagate 106 MB IDE	235
Maxtor 130 MB IDE	260
Conner 170 MB IDE	325
Western Digital 210 MB IDE	365
Quantum 240 MB IDE	400
Western Digital 340 MB IDE	675

Laser Printers

HP Laserjet 4	1355
HP Laserjet IIISI	3050
HP Laserjet IIP+	775
HP Laserjet IIIP	925
Okidata OL400	575
Okidata OL810	1025
Compaq Pagemarq 20	4125
Compaq Pagemarq 15	3000
IBM/Lexmark Laser E	775
Epson EPL-8000	1100

Monitors

NEC 3FGx 15" 1024x768 .28DP	635
NEC 4FG 15" 1024x768 .28DP	750
NEC 5FG 17" 1280x1024 .28DP	1265
Viewsonic 4E 14" SVGA .28DP	300
Viewsonic 7 17" Multi-Scan .28DP	950
Sony 1604S 17" Multi-Scan .25DP	995
SVGA 14" 1024x768 .28DP	275
SVGA 14" 1024x768 .28 Non-Int.	300

Monitor Cards

Fahrenheit 1280 1MB VRAM	210
ATI XL24 1024x768 1MB w/Mouse	150
ATI Graphics Ultra 1 MB w/Mouse	315
Diamond Stealth 1 MB VRAM	210
Trident 8900C SVGA 1024x768 1MB	60

Mother Boards

386SX-33	100
386-33 DX / 40 DX	165 / 170
486-33 DX / 66 DX2	490 / 750
486-50 DX / 50 DX2	670 / 615
486-33 DX Local Bus	525
486-50 DX Local Bus	675
486-66 DX2 Local Bus	775
Upgrade 486 to EISA	Add 175

Printers

HP DeskJet 500	375
HP DeskJet 500C	485
HP DeskJet 550C	685
HP DeskJet Portable	375
HP PaintJet XL300	2175
Okidata ML380 24 Pin	225
Okidata ML590 24 Pin	455
Okidata ML591 132 Col	585
Epson LQ-1070	375
NEC P3200 24 Pin	225

ALR

Advanced Logic Research, Inc.

Flyer SD32 486/33 4MB 1.44 SVGA	1300
BusinessVEISA 486/33 Model 1 5MB	1800
BusinessVEISA 486/66 Model 1 4MB	2300
Ranger Notebk 486SX/25 4MB 80HD	2300

AST COMPUTER

PowerExec Notebk 386SL/25 4MB 120HD	2500
PowerExec NB 386SL/25 4MB 83HD Color	3000
Bravo 486/33 Model 3	1150
Power Premium 486/33 Model 3	2000

COMPAQ

Prolinea 4/33 Model 1 486/33 4MB	1300
Deskpro 486/33m Model 1 4MB EISA	2300
Contura 3/20 386/20 2MB 84HD Notebook	1400
LTE LITE/25 Color 4MB 120HD Notebook	3500

HEWLETT PACKARD

Vectra 386/25N Model 1 2MB SVGA 1.44 ISA	700
Vectra 486/33N Model 1 4MB UVGA 1.44 ISA	1350
Vectra 486/50U Model 1 4MB UVGA 1.44 EISA	2275
Vectra 486/66ST Model 1 4MB UVGA 8 EISA	3000

IBM

PS/ValuePoint 486/33 8MB 120HD SVGA	1525
ThinkPad 300 386SL25 4MB 80HD Notebook	2100
PS/ValuePoint 386SLC/25 2MB SVGA	775
PS/ValuePoint 6312 14" SVGA .28 DP	400

TOSHIBA

T1800 386SX/20 2MB 60HD	1245
T1850 386SX/25 4MB 80HD	1575
T1850C Color 386SX/25 4MB 80HD	2275
T4500 486SX/20 4MB 80HD	2300

All Prices Reflect A 3% Cash Discount

16760 Stagg Street, Suite 202
Van Nuys, CA 91406

(818) 786-7745

Hours M-F 8:00-6:00 Sat. 10:00-5:00

All Software Available at 20% to 75% Off List Price

Corporate and Government Pricing Available Ex. 204 ■ On Site Maintenance Service Availa

All Trademarks Acknowledged ■ Prices Subject to Change Without Notice ■ Visa and Mastercard Accepted

Call For Saturday Specials

UNITEK computer stores

12024 Wilshire Blvd.
West Los Angeles, CA 90025
FULL SERVICE CENTER
Open Monday-Friday
9:00am-7:00pm
Saturday 10:00am-4:00pm

SALES & SERVICE DEPT.
TEL(310) 820-2400
FAX (310)826-1455

NEW! 90 DAY FREE FINANCING!*

NEW! 3 YEAR ON-SITE WARRANTY

COMPAQ®

Authorized Dealer/Service Center

• NOTEBOOKS & PORTABLES •

- Countura --386SL/25 4/120 ..... **CALL**
- Countura --386SL/25 4/84 WIN/ETC..... **FOR**
- Countura --386SL/25 4/120 WIN/ETC ..... **BEST**
- Countura --386SL/25C Color 84/120 ..... **PRICE**
- LTE Lite ---386SL/25 4/80 WIN/ETC **2419**
- LTE Lite ---386SL/25 4/120 WIN/ETC **2619**
- LTE Lite ---386SL/25C Active Color ..... **CALL**
- LTE Lite ---486SLC 120/209 Color..... **CALL**
- Portable ---486/66 4MB 210/525 ..... **4747/CALL**
- Portable ---486/66C 210/525 Color ..... **NEW**

• DESKTOPS •

- Prolinea ---386SX-25 2/84f WIN & ETC **$969**
- Prolinea ---486SX-25 120/240..... **1239/CALL**
- Prolinea ---486DX-33 120/240 WIN & ETC . **1635/CALL**
- Prolinea ---486DXII-50 4/120 WIN & ETC **1895**
- Deskpro ---386DX-33i 4/84 WIN & ETC **1735**
- Deskpro ---486SX-25i 4/84 Win & ETC **1745**
- Deskpro ---486DX-33 All MDLS ..... **CALL**
- Prosignia --486DX2/66 8MB MDL1 ..... **2989**
- SystemPro XL MDL 1, 1 & 2GB HDD ..... **CALL**
- Pagemarq-15, 15PPM PRINTER **3089**

• All Monitors, Accessories & Network Products Available •

SHARP®

Authorized Dealer/Service Center

PC-6785

New Lower Prices

- 386SL-25
- 80 MB HDD
- 4MB RAM
- 4.9Lbs. Only
- 11 x 8.5 x 1.6
- PCMICA SLOT

COMPLETE SYSTEM AS LOW AS $55 PER MONTH*
*Including tax

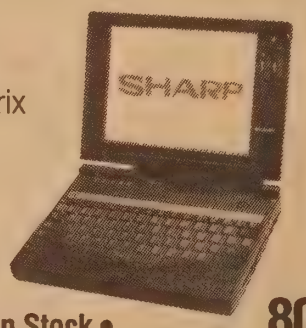
• Always In Stock •

PC6785/80MB $1499

PC-6881

New Lower Prices

- 386SL-25
- Color Active Matrix
- 80MB HDD
- 2MB RAM
- Trackball
- 5.9 Lbs.
- 11 x 8.5 x 1.9
- PCMICA Slot



COMPLETE SYSTEM AS LOW AS $74 PER MONTH*
*Including tax

• Always In Stock •

80MB $2399

OKI OK! OKIDATA®

OKIDATA OK!

Authorized Dealer & Service Center

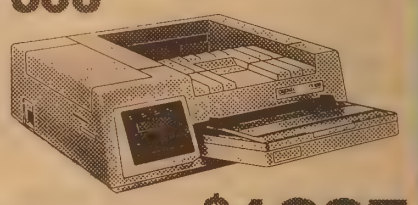
OL-400

- 4PPM Printing Speed
- HP Laserjet Series II Comp..
- Parallel Std. Interface
- 300X300 DPI Res.
- 200 Sheet letter size paper input tray
- Built-in HP Comp. Fonts Cards
- 512 RAM Std./Expandable to 2.5 MB
- 5 year LED head warranty, 1 year Parts and Labor
- Up to 6000 pages per month rated duty cycle

$589 w/Toner

OL-830

- 8 PPM Printing Speed
- Adobe PostScript plus HP LaserJet Series II and Diablo 630 emulations
- Centronics parallel standard, RS-232c serial & AppleTalk interfaces optional
- 300x300 DPI Resolution
- 17 built-in Adobe fonts
- 26 built-in fonts/4 typefaces for emulations
- 200 sheet letter size paper input trayu with adjustable manual feed
- Optional 2nd paper input mechanism & tray
- Auto-Emulation switching capability
- 2 MB RAM standard; expandable to 4.0 MB
- 5 year LED head warranty, 1 year parts and labor
- Up to 16,000 pages per month rated duty cycle

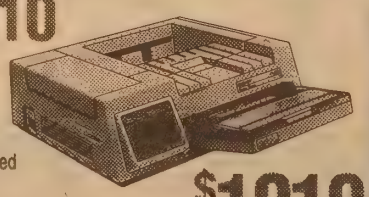


$1225 w/Toner

OL-810

NEW!

- 8PPM Printing Speed
- HP LaserJet Series III, OL400, IBM ProPrinter IIIXL
- OKI SMOOTHING TECHNOLOGY
- 300X300 DPI resolution
- 13 HP III compatible, scalable fonts
- 200 sheet letter size paper input tray with adjustable manual feed
- 1 MB Ram standard; expandable to 5MB
- Full library of HP Compatible scalable font cards
- 5 year LED head warranty, 1 year parts and labor
- Up to 16,000 pages per month rated duty cycle



$1019 w/Toner

• DOT MATRIX PRINTERS •

OKI 184 TURBO	$219
OKI 320 9 PIN.	315
OKI 321 9 PIN	425
OKI 390 & 391	429/585
OKI 590/591 NEW (IN STOCK)	439/589
OKI 393 24 PIN	895
OKI PM-3410, 550CPS, 9PIN	1285

• LED PRINTERS •

OKI 800	$855
OKI 840	1525

Prices subject to change with out notice. Limited Time & Quantity. *OAC Ask for Details.

UNITEK
computer stores

12024 Wilshire Blvd.
West Los Angeles, CA 90025
FULL SERVICE CENTER
Open Monday-Friday
9:00am-7:00pm
Saturday 10:00am-4:00pm

SALES & SERVICE DEPT.
TEL(310) 820-2400
FAX (310)826-1455

NEW! 90 DAY FREE FINANCING!*

T1800
SATELLITE NOTEBOOK
386SX-20, 2MB, 1.44
VGA, DOS 5.0
60MB **$1069**
60MB, Bundle **1169**

T1850
386SL-25, 2MB, 1.44
VGA, DOS 5.0, 5.9lbs.
80MB **$1469**
80MB w/Bundle **1579**
120 MB **1669**

• SALE! • SALE! • SALE! • SALE! • SALE! • SALE! • SALE! • SALE! •

TOSHIBA
• Authorized Dealer •

- **T3300SL 80/120** **1869/2099**
  2MB, 1.44 386SL-25, 5.9 lbs.
- **T4400SX 80/120** **2199/2345**
  2MB. 1.44 486SX-25, LCD Screen
- **T4400C 120HDD** **$3499**
  486SX-25, 4MB, Active Matrix 9.5
- **T4400C 200HDD** ..... **CALL**
  486DX-25, 4MB, Active Matrix 9.5
- **T4500 80/120** **2345/2531**
  486SX-20, 4MB, LCD, WIN 3.1
- **T4500C 80/120** ..... **CALL**
  486SX-20, 4MB, Active Matrix Window
- **DYNAPAD T100X 40HDD** ..... **NEW**
  386SXLV-25, Pen Point Ready
- **T6400DX 200HDD** **$3899**
  486DX-33, 4MB, Gas Plasma 11.7 lbs.
- **T6400SXC/120** **5459**
  486SX-25, 4MB, Active Matrix
- **T6400DXC 200HDD** **5775**
  486DX-33, 4MB, Active Matrix
- **T6400 MM 200 Multimedia** ..... **NEW**
  486DX33, Active Multimedia

• We Service & Upgrade All Toshiba Computers •
• All Accessories Available •

T4400C
TFT-Active Matrix
486SX-25, 4MB, 1.44, 9.5" Screen,
upgradeable to DX, 7.9lbs.
120MB **$3499**
200MB 486DX ..... **CALL**

T4500
486SX-20 4MB
DOS, Windows, Trackball
80MB **$2345**
120MB **2539**
T4500C 120 ..... **Call**

NEC
Authorized Dealer
NEC 3FGX **639**
NEC 4FG **749**
NEC 5FG. **1269**
NEC 6FG. **2299**

NOTEBOOK
Ultralite 386SL/20
2/80 or 120 ..... **1445/1645**
Ultralite 386SL/20P
4/80 or 120 ..... **1745/1975**
Ultralite 386SL/25C
2/120 Color **2725**

SONY.
Sony 1430 w/Cable **$589**
Sony 1302 1024x768 .25 ..... **519**
Sony 1320 800x600 ..... **429**
Sony 1604 17" Monitor
1024x768 .25DP **$995**
Sony CD-ROM Bundle **619**
• AVAILABLE WITH MAC ADAPTER! •

Compatibles
Amptron 386DX-40, 2MB, 1.2, K.B ... **$465**
Amptron 486DX-33, 4MB, 1.2, K.B . **CALL**
Amptron 486DXII-50, 4MB, 1.2, 80B,
SVGA Card **1135**
Amptron 486DXII-66, 4MB, 1.2, K.B . **1299**

***U.S. Assembled ***

HEWLETT PACKARD

LASERJET PRINTERS
IIP Plus w/Toner (NEW) **$769**
IIIP w/Toner **949**
III w/Toner ..... **Call**
HP 4 w/Toner ..... **Call**
HP 4M w/Toner ..... **Call**
IIID w/Toner **2235**
IIISI w/Toner ..... **Call**

SCANNERS
HP IIP w/AT CTRL **$799**
HP IIC w/AT CTRL **$1375**

• Also Available for Mac •

INKJET PRINTERS
DeskJet 500 ..... **$389**
DeskWriter. **389**
DeskJet 500C **495**
DeskWriter C **495**
DeskJet 550C **695**
Deskwriter 550C **695**
PaintJet XL-300. ..... **2179**

LASERJET FAX
LaserJet Fax 200 ..... **$979**
LaserJet Fax 310 ..... **$1299**

• ALL ACCESSORIES AVAILABLE AT DISCOUNT PRICES •

Memory Upgrades
II,IID,III,IIIP, D, IIP
1MB/2MB **$99/119**
3MB/4MB **149/189**
***5 Years Mfg. Warranty on Board ***

HP 95LX Palmtop Comp 1MB **$589**
HP Connectivity Pack **89**

Accessories
IIP, IIIP Lower Tray **$145**
HP II, III Toner **79**
HPIIP, IIIP Toner **69**
HP Postscript Cartridge II **469**
Pacific Page Postscript PE **369**
Pacific Page XL Cartridge. **749**
HP LaserJet Fax. **925**

Lower Prices

IBM PS/ValuePoint

- **ValuePoint 325T 80/170** **995/1195**
  386SLC, 2MB, SVGA, K.B., DOS 5.0
- **ValuePoint 425SX 80/170** **1299/1499**
  486SX-25, 8MB, SVGA, K.B., OS/2
- **ValuePoint 433DX 120/212** **1685/1875**
  486DX-33, 8MB, SVGA, K.B., OS/2
- **ValuePoint 466DX2 212MB** **2549**
  486DX2-66, 8MB, SVGA, K.B., OS/2

• Monitors •
- **IBM** - 6312 14" **$419**
- **IBM** - 6314 14" **525**
- **IBM** - 6319 15" **669**

Authorized Dealer

Printers

OKIDATA
Authorized Sales/Service
320/321 ..... **$319/429**
390/391 ..... **429/585**
Oki 590/591 ..... **439/589**
Oki 400 4ppm w/Toner. **589**
Oki 810 8ppm w/Toner. **1019**
Oki 830 8ppm. **1225**
Postscript, 35 Fonts, 2MB RAM
Oki 840 8ppm **1545**
2MB, Postscript, Mac Comp

EPSON
Authorized Dealer
LX-810 9 Pin **$179**
LQ-570 24 Pin **275**
FX-850/FX-1050 9 Pin. **309/399**
LQ-870/LQ-1170 24 Pin **449/609**
LQ-1070 24 Pin 132 Col. **395**
LQ-2550 24 Pin, High Speed **899**
DFX-5000 9 Pin, 533 CPS ..... **CALL**

★ LASER ★
Actionlaser II, 6PPM **$689**
EPL-8000 Laser, 10PPm, 1MB **1289**
All Accessories Available

CITIZEN
Authorized Sales/Service
GSX 240 NEW **$309**
GSX 130 ..... **275**
GSX 145, 132 COL **409**
200 GX, 9 Pin **169**
Color Option **49/69**

Canon
Bubble Jet
BJ-10EX Printer **$259**
BJ-300 80 col, 600 cps **359**
BJ-330 132 col, 600cps **595**
BJ-200 360dpi **359**
BJC-800/820 Color **1889/1995**

brother *NEW*
HL-10V Laser Printer **$1195**
10PPM, HP3 Compatible 1MB, 35 Fonts
HL-10PS Postscript w/ Appletalk **$1295**

Prices subject to change with out notice. Limited Time & Quantity. *OAC Ask for Details.

Microsoft has some other major workstation vendors, notably DEC, who are betting the future of their low and middle series on Windows NT.

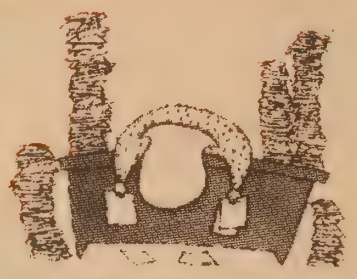
allows a system administrator to give a particular user on the network the right to use resources on different servers. Because this feature is not expected in Windows NT for over a year, many companies who were debating between staying with NetWare or going to Windows NT will probably commit to NetWare v4, which will be available within the next few months.

The pressure from Novell could not come at a worse time for Microsoft. If Windows NT came out before NetWare v4, Microsoft could at least make it look like Novell was playing catch-up. However, since Novell will beat Microsoft by a few months (and possibly many months, if Microsoft's ship date slips), Novell will get to set the rules for which features are considered most important. With the likely merging of features between UNIX and NetWare within the next two years, UNIX sites that were thinking seriously about Windows NT for their PCs will now also think seriously (probably for the first time) about NetWare.

On the other hand, even though Microsoft may be late with Windows NT, it is still racking up major hardware vendors to support it. Although almost everyone who is anyone in the PC field has already pledged support for Windows NT, those same companies also showed support for OS/2 because such support was free.

Microsoft has some other major workstation vendors, notably DEC, who are betting the future of their low and middle series on Windows NT. DEC is already showing pre-beta versions of its forthcoming Alpha systems running Windows NT. DEC has long been one of the largest proponents of UNIX, and its strong commitment to Windows NT has caused its competitors to look at Windows NT as a serious alternative to UNIX. Recently, Sequent has said that it will promote Windows NT on its low-end machines, and Intergraph will port Windows NT to its proprietary RISC chip in the next two years.

This backing from the non-Intel world may have surprising effects on the standard PC market. While the cost of running Windows NT instead of Windows 3.1 may seem high to many users, if Windows NT offers superior interoperability with the company's file server or graphics server, it may become a required item. For the first few months, most purchasers of Windows NT will be people determining if the extra features are really worth the higher price. When the first RISC-based systems running Windows NT are released, however, it is likely that some companies may want to run Windows NT on their PCs if doing so makes their network more stable. On the other hand, they may decide that UNIX is just fine, particularly if Novell has made it even easier to link NetWare into UNIX networks by then. ■



IDBMA, Inc.'s INTERNATIONAL Spectrum®

The BusinessPerson's Computer Show®

April 6 - 8, 1993
April 6 & 7 - 9:30 a.m. to 5:00 p.m.
April 8 - 9:30 a.m. to 3:30 p.m.

Anaheim Convention Center

The computer show for people who just want computers to work for them.

Data General · Bull · IBM · Hewlett Packard · Sanyo Icon · digital · Tandem · NCR · Wyse

User friendly...

If you use a computer at work, we would to invite you to International Spectrum, **The BusinessPerson's Computer Show,** to see the latest in user friendly hardware and software applications designed specifically for business.

Join more than 150 exhibitors that can help you find answers to all your computer needs, in just an hour or two. Our exhibitors know and understand ***your*** business and can provide hardware and software solutions including:

• Accounting • Distribution • Inventory Control • Invoicing • Manufacturing • Order Entry, and many others.

Also at the show this year you'll find:

- TECH-SWAP, a computer and office equipment exchange center
- COMPUTER JOB MATCH, a career opportunity center
- HOT PRODUCTS SHOWCASE, demonstrations of the newest and hottest software and peripherals
- ON-SITE INFORMATION BOOTHS to provide you assistance right on the show floor
- Hewlett-Packard Palmtop **computer give-aways**

For more information call 1-800-767-SHOW

For admission to the 12th annual International Spectrum, bring this free pass with you, or mail/FAX it to us by March 15 and avoid standing in line.

NAME _____ ADDRESS _____

TITLE _____ CITY _____ STATE _____ ZIP _____

COMPANY _____ PHONE _____ FAX _____

BUSINESS/INDUSTRY
❑ Distribution ❑ Direct Marketing ❑ Banking/Savings & Loan ❑ Education
❑ Manufacturing ❑ Medical ❑ Advertising ❑ Accounting ❑ Dental
❑ Insurance ❑ Property Management ❑ Legal ❑ Publishing ❑ Retail
❑ Communications ❑ Construction ❑ Aerospace ❑ Transportation ❑ Printing ❑ Other: _____

OPERATING ENVIRONMENTS IN USE:
❑ DOS ❑ PICK ❑ UNIX ❑ Other _____

F

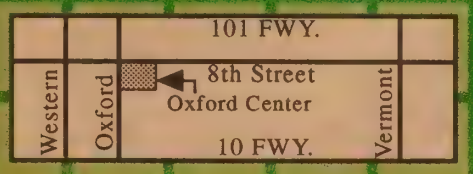
COMPLIMENTARY $20.00

International Spectrum, 10675 Treena Street, Suite 103, San Diego, CA 92131-2478 FAX (619) 271-1032

PICK is a registered trademark of Pick Systems, Inc. of Irvine, Calif. UNIX is a registered trademark of AT&T Bell Laboratories. International Spectrum and The BusinessPerson's Computer Show are registered trademarks of IDBMA, Inc. of San Diego, Calif.

LOS ANGELES

3548 1/2 W. 8TH ST.
L.A., CA 90005
TEL. (213) 383-9900
FAX (213) 385-1621



Computek

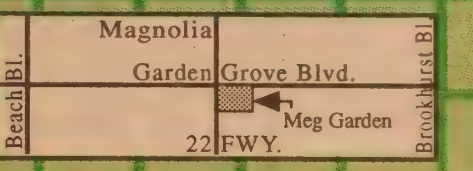
TOLL FREE
1-800-974-9901

VISA MasterCard DISCOVER AMERICAN EXPRESS

FINANCING AVAILABLE WITHIN 20 MINUTES

GARDEN GROVE

9042 GARDEN GROVE BL. #100
GARDEN GROVE, CA 96244
TEL. (714) 741-9494
FAX (714) 741-9498



486DX2/50MHz
$1249/$1199
Reg. Cash

- 486SX/25MHZ (INTEL)
- 64K CACHE
- 200 W POWER SUPPLY
- MINI OR DESK TOP CASE
- 2MB RAM
- 85MB HARD DISK
- SUPER I/O & IDE CARD
- 101 KEYBOARD
- 1.2MB FLOPPY DRIVE
- 1.44MB FLOPPY DRIVE
- SVGA MONITOR W/CARD
- 1 YEAR PARTS WARRANTY
- 5 YEARS LABOR WARRANTY
- 72 HOURS BURN-IN TEST

intel inside

BUY A COMPUTER WIN A CAR

1ST PRIZE
AUTOMOBILE (ELANTRA)
2ND PRIZE
ROUND TRIP AIR TICKET
3RD PRIZE
27" COLOR TELEVISION
AND SO MUCH MORE ... DON'T WAIT COME IN AND ENTER NOW
SALE PERIOD: JAN. 1, 1993 - FEB. 26, 1993

486DX/33MHz
$1145/$1099
Reg. Cash

- 486DX/33MHZ (INTEL)
- 256K CACHE
- 200W POWER SUPPLY
- MINI OR DESK TOP CASE
- 2MB RAM
- 85MB HARD DISK
- SUPER I/O & IDE CARD
- 101 KEYBOARD
- 1.2MB FLOPPY DRIVE
- 1.44MB FLOPPY DRIVE
- SVGA MONITOR W/CARD
- 1 YEAR PARTS WARRANTY
- 5 YEARS LABOR WARRANTY
- 72 HOURS BURN-IN TEST

intel inside

UNBEATABLE PRICES FOR QUALITY COMPUTERS!!!

386SX/25MHZ	386SX/33MHZ
$248 Reg.	$259 Reg.
$239 Cash	$249 Cash
386DX/40MHZ	**486SX/25MHZ**
$301 Reg.	$364 Reg.
$289 Cash	$349 Cash

SYSTEM INCLUDES

- MINI OR DESKTOP CASE
- 230W POWER SUPPLY
- 1MB RAM
- SUPER I/O & IDE CARD
- 1.2MB FDD or 1.44MB FDD
- 2 SERIAL/1 PARALLEL/1 GAME
- 101 KEYBOARD
- CLOCK & CALENDAR
- 1 YEAR PARTS WARRANTY
- 5 YEARS LABOR WARRANTY
- 72 HOURS BURN-IN TEST

486DX/33MHZ (256K CACHE)	486DX2/50MHZ (256K CACHE)
$582 Reg.	$759 Reg.
$559 Cash	$729 Cash
486DX/50MHZ (256K CACHE)	**486DX2/66MHZ (256K CACHE)**
$780 Reg.	$832 Reg.
$749 Cash	$799 Cash

RAM UPGRADE

1M TO 2M	$35	JOYSTICK	$20
2M TO 4M	$70	MODEM	$35
1M TO 4M	$95	FAX MODEM	$65
1M TO 8M	$215	1.2M FDD	$55
MOUSE	$15	1.44M FDD	$50

PRINTERS

PANASONIC 1123	$195
OKIDATA 380	$225
EPSON LQ570	$255
PANA LASER 4410	$649
HP LASER IV	$1395
HP INKJET 550C	CALL

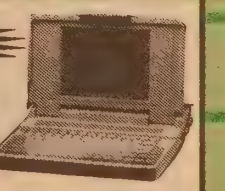
MONITORS

MONO W/MGP 12"	$85
MONO W/MGP 14"	$95
VGA W/CARD 14"	$199
SVGA W/CARD 14"	$249
NI SVGA/CARD 14"	$329
IBM PS/2 Original w/card	$209

HARD DISKS

40MB IDE DRIVE	$139
85MB IDE DRIVE	$189
120MB IDE DRIVE	$239
170MB IDE DRIVE	$259
210MB IDE DRIVE	$339
340MB IDE DRIVE	$519
1.2GB IDE DRIVE	CALL

NOTEBOOKS



- 386SX/20MHZ
- 2MB RAM
- 60MB HARD DISK
- 1.44MB FLOPPY
- VGA LCD

$999

NETWORKS

- NOVELL CERTIFIED NETWARE ENGINEER
- NETWORK INSTALLATION SPECIALIST
- 5 USERS
- 10 USERS
- 20 USERS
- 100 USERS
- V 2.2
- V 3.11
- FREE ESTIMATION

Novell Gold Authorized Reseller

** Availability and Prices are subject to change without notice.*
** Computek is not responsible for any typographical errors.*

9AM - 9PM MON - FRI 10AM - 6PM SAT

MICROTIMES INDEX HITS RECORD HIGH

Spurred on by lower interest rates and the nation's lowest employment rate in the last year, technology stocks picked up where they left off last period.

When the books were closed on the monthly trading session, the MicroTimes Stock Index stood 63.31 points higher, or 1.57%, at yet another high of 4083.40. Our indicator, however, paled in comparison to the Dow Jones Industrial Average, which smashed through its old record en route to a new high of 3442.14 — up 5.5%, or 179.39 points.

Turning to technology shares last month: After posting its first-ever operating loss last period, IBM's CEO and chairman, John Akers, agreed to step down as the company's CEO as soon as a successor is chosen. Additionally, for the first time in IBM's history, the firm slashed its quarterly dividend by about 55%, to 54 cents a share, from $1.21, where it had remained since May 1989. IBM's stock, however, rallied from its new 52-week low of $43.88, to its close of $52, up $4.25 a share, or 8.9%.

In earnings news, AT&T reported a 57% rise in net income in its fourth-quarter. Specifically, the company reported fourth-quarter earnings of $1 billion, or 75 cents a share—up markedly from profits of $635 million, or 48 cents a share, 3.88%-gain, during the three-week long trading stanza, climbing to its new 52-week high of $55.25, before slipping to its closing mark of $53.50.

Adobe Systems led all shares on a dollar-gained basis last session, as that stock soared 22.43%, or $7.63 a share, before concluding the trading stanza at $41.63. Last period, the firm reported fourth-quarter earnings slightly above analysts' expectations. Specifically, Adobe posted fourth-quarter earnings of 37 cents a share, down from 57 cents a share reported in the year-earlier quarter. Separately, shares of the company were raised to "market performer" from "underperformer" at Openheimer & Co.

In stark contrast, Dell Computer plummeted $7.13 a share, leading all shares on a southerly course and taking largest dollar-loss dishonor. Last period, Prudential Securities cut its investment rating for the computer concern to "hold" from "buy," citing the stock's excessive price for the downgrade. Dell fell from its 52-week high of $49.88 to its close of $39.25, off 15.36% from its previous close. ■

EXCH	COMPANY		TICKER SYMBOL	CLOSING PRICE 01/11/93	CLOSING PRICE 02/05/93	NET CHANGE IN MONTH	PERCENT CHANGE IN MONTH	P/E RATIO	ANNUAL DIVIDEND RATE	ANNUAL DIVIDEND YIELD	ANNUAL HIGH	ANNUAL LOW
	SOFTWARE											
OTC	Adobe		ADBE	34.00	41.63	7.63	22.43	22	0.32	0.77	63.50	25.25
OTC	Aldus		ALDC	14.50	16.75	2.25	15.52	36	0.00	0.00	34.25	10.25
OTC	Autodesk		ACAD	49.75	43.63	-6.13	-12.31	26	0.48	1.10	56.50	23.25
OTC	Borland	(L)	BORL	20.25	19.88	-0.38	-1.85	–	0.00	0.00	78.00	17.50
OTC	Informix	(H)	IFMX	34.75	38.25	3.50	10.07	29	0.00	0.00	42.00	12.13
OTC	Lotus		LOTS	19.75	24.25	4.50	22.78	13	0.00	0.00	38.75	14.75
OTC	Microsoft		MSFT	89.13	89.00	-0.13	-0.14	32	0.00	0.00	95.00	65.50
OTC	Novell		NOVL	31.50	30.00	-1.50	-4.76	37	0.00	0.00	33.50	22.50
OTC	Oracle	(H)	ORCL	29.50	32.00	2.50	8.47	52	0.00	0.00	36.38	12.00
OTC	Software Publishing		SPCO	9.25	12.50	3.25	35.14	–	0.00	0.00	26.25	6.75
OTC	Symantec		SYMC	13.00	12.13	-0.88	-6.73	–	0.00	0.00	48.75	5.88
	HARDWARE											
OTC	Apple		AAPL	64.13	57.25	-6.88	-10.72	13	0.48	0.84	70.00	41.50
OTC	AST Research		ASTA	22.25	17.50	-4.75	-21.35	10	0.00	0.00	24.25	11.25
NYS	Commodore	(L)	CBU	6.38	5.50	-0.88	-13.73	–	0.00	0.00	16.25	5.38
NYS	Compaq	(H)	CPQ	50.50	48.13	-2.38	-4.70	19	0.00	0.00	58.50	22.25
NYS	Digital Equipment		DEC	35.25	42.25	7.00	19.86	–	0.00	0.00	65.50	30.38
OTC	Dell	(H)	DELL	46.38	39.25	-7.13	-15.36	18	0.00	0.00	49.88	15.00
NYS	Hewlett-Packard		HWP	72.75	68.50	-4.25	-5.84	19	0.80	1.17	85.00	50.25
NYS	IBM	(L)	IBM	47.75	52.00	4.25	8.90	–	2.16	4.15	100.38	45.88
NYS	Silicon Graphics	(H)	SGI	28.88	30.38	1.50	5.19	–	0.00	0.00	33.00	14.13
OTC	Sun Microsystems	(H)	SUNW	37.38	35.00	-2.38	-6.35	26	0.00	0.00	41.00	22.50
NYS	Xerox	(H)	XRX	83.88	86.38	2.50	2.98	–	3.00	3.47	87.50	66.75
NYS	Tandy	(H)	TAN	29.38	28.00	-1.38	-4.68	13	0.60	2.14	32.13	22.25
	CPU'S											
NYS	Advanced Micro Devices		AMD	19.88	19.63	-0.25	-1.26	8	0.00	0.00	21.50	7.38
OTC	Intel	(H)	INTC	102.38	106.88	4.50	4.40	22	0.40	0.37	118.00	46.50
NYS	LSI Logic	(H)	LSI	10.88	10.50	-0.38	-3.45	–	0.00	0.00	12.25	4.88
NYS	Motorola		MOT	56.38	53.38	-3.00	-5.32	24	0.44	0.82	63.00	36.44
	COMMUNICATIONS											
NYS	AT&T	(H)	T	51.50	53.50	2.00	3.88	19	1.32	2.47	55.25	36.63
NYS	BellSouth Corp.		BLS	52.13	52.75	0.63	1.20	16	2.76	5.23	55.50	43.38
OTC	MCI	(H)	MCIC	41.25	39.88	-1.38	-3.33	18	0.10	0.25	43.38	29.50
NYS	Northern Telecom		NT	40.88	42.50	1.63	3.98	20	0.36	0.85	49.25	30.50
NYS	Pacific Telesis	(H)	PAC	43.38	46.63	3.25	7.49	16	2.16	4.63	47.88	36.88

KEY: NYS = NEW YORK ASE = AMERICAN OTC = OVER THE COUNTER
(H) = NEW HIGH REACHED IN PERIOD (L) = NEW LOW REACHED IN PERIOD

MARKET DIARY:

ADVANCES	15
DECLINES	17
UNCHANGED	0
NEW HIGHS	13
NEW LOWS	3

MOST ACTIVE ISSUES:

LARGEST DOLLAR GAINER	Adobe	$ 7.63
LARGEST DOLLAR LOSER	Dell	$ -7.13
LARGEST PERCENTAGE GAINER	Software Publishing	35.14 %
LARGEST PERCENTAGE LOSER	AST Research	-21.35 %

	CLOSE 01/11/93	CLOSE 02/05/93	NET CHANGE IN MONTH	PERCENT CHANGE IN MONTH
MICROTIMES STOCK INDEX	4020.09	4083.40	63.31	1.57
DOW JONES INDUSTRIAL AVERAGE	3262.75	3442.14	179.39	5.50
STANDARD & POOR'S 500 STOCK INDE	430.95	448.93	17.98	4.17
N.Y.S.E. COMPOSITE	237.09	247.60	10.51	4.43
NASDAQ COMPOSITE	682.40	700.98	18.58	2.72

CLOSING QUOTES FOR GRAPH:

DATE	MICRO TIMES	DOW JONES
07/02/92	3182.43	3330.29
07/31/92	3367.19	3393.78
08/28/92	3198.48	3267.61
09/25/92	3313.28	3250.32
10/23/92	3536.03	3207.64
12/10/92	3825.83	3312.19
01/11/93	4020.09	3262.75
02/05/93	4083.40	3442.14

Copyright Nordby International, Inc. Louisville, CO

This information is based on sources believed to be reliable, and while extensive efforts are made to assure its accuracy, no guarantees can be made. Nordby International and Microtimes assume no liability for any inaccuracies. For phone numbers, addresses or any additional financial information on any of the above companies call Nordby International at (303) 666-5903.

YOUR ONE-STOP NETWORKING SOLUTION

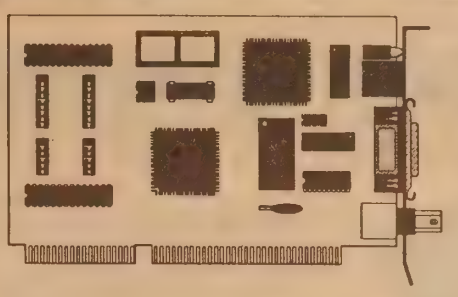
ETHERNET HARDWARE

NE-1	NE-1000 compatible, 8-bit, BNC and AUI ports use RG-58 or standard Ethernet cable. Includes diagnostic LED's.	75
NE-1T	NE-1000 compatible, 8-bit, 10Base-T and AUI ports use 10Base-T or standard Ethernet cable. Includes diagnostic LED's.	75
NE-12	NE-2000 compatible, 16-bit, BNC and AUI ports use RG-58 or standard Ethernet cable. 16K SRAM buffer on-board. LED's for diagnostics and network traffic. High IRQ's allow more adapters inside one computer.	79
NE-12T	NE-2000T compatible, 16-bit, 10Base-T and AUI ports use 10Base-T or standard Ethernet cable. Otherwise has the same features as the NE-12.	79
NE-12CT	NE-2000 compatible, 16-bit, 10Base-T and BNC ports use 10Base-T or thin Ethernet cable. With all the features of the NE-12 and NE-12T.	89
NE-3	Western Digital EtherCard Plus (8003) compatible, 8-bit, BNC and AUI ports. Includes LED's. Good for Unix, PC/NFS, etc.	85
NE-13	Western Digital EtherCard Plus (8013) compatible, 16-bit, BNC and AUI ports, 16K SRAM buffer on-board. High performance Ethernet adapter with LED's for diagnostics and network traffic monitoring.	99
EM-160	Microchannel, Novell NE/2 compatible, BNC and AUI ports, with 16K SRAM buffer. Specially designed for IBM PS/2 computers.	195
EM-160T	Microchannel, Novell NE/2T compatible, 10Base-T and AUI ports, with 16K SRAM buffer. Specially designed for IBM PS/2 computers.	195
EM-320	EISA Bus, 32-bit bus master combo adapter. With BNC, 10Base-T and AUI ports. Includes NetWare driver.	295
EM-202C	Repeater, 2-port (2 BNC + 2 AUI), with LED's.	395
EM-204C	Repeater, 4-port (4 BNC + 4 AUI), with LED's.	595
EM-60T	Transceiver, converts AUI port to 10Base-T connector.	85
EM-60F	Transceiver, converts AUI port to fiber-optic connector.	395
EM-60S	Transceiver, standard Ethernet (AUI-thick coaxial) cabling system.	175
EM-60B	Transceiver, converts AUI port to BNC connector.	125
EM-400	Pocket Adapter, BNC port, NetWare driver. Good for laptop or notebook.	165
EM-400T	Pocket Adapter, 10Base-T port, with NetWare driver.	165
EM-402	Pocket Adapter, BNC + 10Base-T ports, with NetWare driver.	215
EM-700	PCMCIA type 2 standard credit card-type adapter. With NetWare driver. Specially designed for notebook, pocket or palm-sized computers.	295
EP-501TH	4-port internal concentrator (hub) with built-in 10Base-T adapter.	275
EP-501TE	4-port concentrator (hub) expander for EP-501TH only.	75
EP-500T	8-port (8 RJ-45 + 1 BNC) external concentrator (hub) for 10Base-T, mini-size. LED's monitor Link, Receive, Partition, Polarity and Collision. The BNC port can connect to other concentrators or a workstation.	275
EM-508T	8-port external concentrator for 10Base-T (8 RJ-45 + 1 BNC + 1 AUI).	325
EM-1200	12-port extrenal concentrator for 10Base-T (12 RJ-45 + 1 BNC + 1 AUI).	495
EM-1220S	12-port intelligent external concentrator (hub) for 10Base-T (12 RJ-45 + 1 BNC + 1 AUI).	1500
10-100	Tool, rotary coaxial cable stripper for RG-58/RG-62 coaxial cable.	35
10-180	Tool, three-way stripper (with cutting) for 8P8C twisted-pair flat cable.	17
84-002	Inline Coupler, RJ-45, to connect two 10Base-T cables together.	3
84-081	Wall Plate, single RJ-45 socket.	5
84-082	Wall Plate, double RJ-45 sockets.	7
87-045	Conductor Plug, RJ-45, for 8P8C twisted-pair flat cable.	3/10pcs
82-058	T-Connector, RG-58, for 10Base2 (thin) Ethernet.	3
89-050	Terminator, 50-Ohm, for 10Base2 (RG-58/thin) Ethernet.	5
87-058	BNC Connector, twist-on, RG-58 for 10Base2 (thin) Ethernet.	2
85-025	25' Cable with BNC connectors, RG-58 for 10Base2 (thin) Ethernet.	10
85-050	50' Cable with BNC connectors, RG-58 for 10Base2 (thin) Ethernet.	18
85-100	100' Cable with BNC connectors, RG-58 for 10Base2 (thin) Ethernet.	30
85-500	500' Raw Cable, RG-58 for 10Base2 (thin) Ethernet, no connectors.	50
83-025	25' Cable with RJ-45 plugs for 10Base-T Ethernet.	7
83-050	50' Cable with RJ-45 plugs for 10Base-T Ethernet.	10
83-100	100' Cable with RJ-45 plugs for 10Base-T Ethernet.	15
BE-000	Ethernet BOOT ROM for NetWare	29
EK-512	5 Piece Kit, with (1) EP-501TH hub/adapter and (4) NE-12T adapters.	495

TOKEN RING HARDWARE

TP-100	8-bit adapter for type 1 cable, 4/16Mbps. Uses IBM module.	395
TP-200	16-bit adapter for type 1 or 3 cable, 4/16Mbps. IBM compatible.	395
TP-160	Microchannel adapter for type 1 cable, 4/16Mbps. IBM compatible.	455
TP-320	EISA Bus 32-bit adapter for type 1 or 3 cable, 4/16Mbps, IBM compat.	725
TP-402	Pocket adapter for type 1 or 3 cable, 4/16Mbps transfer rate.	495
TP-700	PCMCIA type 2 adapter (credit card type).	795
TP-901	8-port MAU (concentrator) for type 1 cable.	395
TP-903	8-port MAU (concentrator) for type 3 cable.	395
81-008	8' Token Ring type 1 cable with connectors.	45

EtherPerfect EP-301



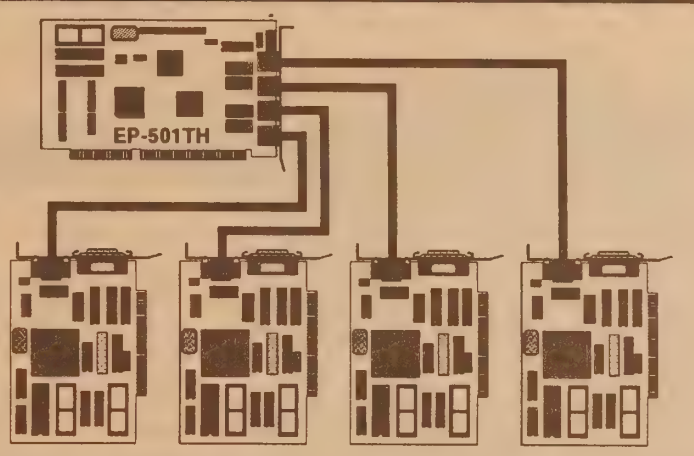
yes NetWare® Tested and Approved

THE ALL-IN-ONE ETHERNET ADAPTER

The EP-301 is the only true all-in-one adapter in the market. This adapter features three connectors (BNC, RJ-45/10Base-T, AUI) and emulates at least ten of the most popular adapters on the market, including Novell/Eagles's NE-1000, NE-2000, NE-2000T; WD/SMC's EtherCard Plus 8-bit (8003), 16-bit (8013); 3Com's Etherlink II (3C503) 8-bit and 16-bit. Additional operating modes are included. The EP-301 is fully software configurable (jumpers are included for special applications). Includes drivers for ODI, NDIS and TCP/IP.

$139

EK-511 5-Piece 10Base-T Kit



VERY ECONOMICAL 10BASE-T NETWORK KIT

The EK-511 is the best way to start a 10Base-T Ethernet network. Its price includes an EP-501TH concentrator/hub card (features a built-in 10Base-T adapter, software-configurable, compatible with a wide range of adapters, includes ODI, NDIS and TCP-IP drivers) and 4 NE-1T 8-bit 10Base-T adapters (NE-1000 compatible in a 10Base-T environment). The EK-511 kit and 10Base-T cable are all the network hardware you'll need to start your 10Base-T network. This kit is specially suited to users of Novell NetWare and NetWare Lite.

$395

Call for ARCnet Hardware and NetWare Software

Internet Technology Inc.

15338 E. Valley Blvd ❖ City of Industry, CA 91746

Sales Line:

1-800-322-2822

Information and Technical Support Line: (818) 333-7730

VISA

All trademarks belong to their respective owners. Prices and specifications are subject to change without notice. RMA policy available through information line.

MasterCard

Citicom Computer, Inc.

Computer Retail & Wholesale

Emphasis on Excellence

We Will Beat Any System Price
In This Magazine *

Apply for Your Own Citicom Credit Line
Approval in 30 Minutes
In Most Cases
90 Days Interest FREE

CITICOM SPECIALS OF THE MONTH

COMPLETE SUPER VGA SYSTEM
486DX-33MHz w/ 256K Cache

$1245

- Intel CPU & AMI BIOS
- Mini-Tower Case
- 230W Power Supply
- 4MB RAM (70ns)
- 120MB IDE Hard Drive
- 1.2MB & 1.44MB Floppy Drive
- Tatung SVGA Color Monitor
- 16 BIT Super VGA Card
- 101 Enhanced Keyboard
- 2S, 1P, 1G Ports
- FREE MOUSE

COMPLETE VGA SYSTEM
386DX-40MHz w/ 128K Cache

$745

- AMI BIOS
- Mini-Tower Case
- 230W Power Supply
- 1MB RAM (70ns)
- 80MB IDE Hard Drive
- 1.2MB or 1.44MB Floppy Drive
- VGA Color Monitor
- 16 BIT VGA Card
- 101 Enhanced Keyboard
- 2S, 1P, 1G Ports
- FREE MOUSE

CITICOM BAREBONE SYSTEMS

386SX-33MHz **$245**	486SX-25MHz **$375**
386DX-40MHz w/ 128K Cache **$305**	486DLC-33MHz w/ 128K Cache **$445**

System Includes:

- Mini-Tower Case
- 230 Watt Power Supply
- 1MB RAM
- 1.2MB or 1.44 MB Floppy Drive
- Dual Floppy & Hard Controller
- 101 Enhanced Keyboard
- 2S, 1P, 1G Ports
- Clock & Calendar
- 1 Year Limited Warranty

486DX-33MHz w/ 256K Cache **$565**	486DX-50MHz w/ 256K Cache **$725**
486DX2-50MHz w/ 256K Cache **$695**	486DX2-66MHz w/ 256K Cache **$825**

Hard Disk Drives

Conner CP3000	40MB IDE (29ms, 9K Cache)	$145
Conner CP30084	80MB IDE (17ms, 64K Cache)	$195
Conner CP30104	120MB IDE (17ms, 64K Cache)	$235
Conner CP30174	170MB IDE (17ms, 64K Cache)	$275
Conner CP30204	210MB IDE (12ms, 256K Cache)	$375
Maxtor MX-7120AT	130MB IDE (15ms, 64K Cache)	$245
Maxtor MX-7213AT	213MB IDE (15ms, 64K Cache)	$345
Maxtor MX-7245AT	245MB IDE (15ms, 64K Cache)	$385
Maxtor XT-8760SH	676MB SCSI 16.5ms	Call

* We Carry All Brands & Models

Monitors

14" Monochrome (Paper White)	$ 95
14" VGA Color (.42mm, 800x600)	$195
14" Tatung Super VGA Color (.39mm, 1024x768)	$235
14" Super VGA Color (.28mm, 1024x768)	$265
14" Super VGA Non-Interlaced (.28mm, 1024x768)	$295
NEC 3FGX 15" SVGA Non-Interlaced (.28mm, 1024x768)	$645
NEC 4FG 15" SVGA Non-Int. (.28mm, 1024x768, Dig.)	$745
NEC 5FG 17" SVGA Non-Int. (.28mm, 1280x1024, Dig.)	Call
Viewsonics 7 17" SVGA (Non-Int. 1280x1024, .28mm)	Call

* We Carry All Brands & Models

Printers

Epson LQ-570	$ 245
Panasonic KX-P1180I	$ 155
Panasonic KX-P4410	$ 625
HP LaserJet IIP Plus	Call
HP LaserJet IIIP	Call
HP LaserJet 4 (NEW)	Call
LM 1000/4 (1000 DPI)	$2745

Misc.

High Res. Ser. Mouse	$ 15
Microsoft Ser. Mouse	$ 59
2400 Baud Modem	$ 35
1.2MB or 1.44MB FDD	$ 55
101 Enh. Keyboard	$ 25
9600 Fax/Modem	$ 59
Multi-Media Kit	$ 545

Notebook Blow Out Special

386SXL-25MHz

- 2MB RAM
- 80MB Hard Drive
- 1.44MB Floppy
- LCD VGA Display
- and many features

$1275

486DX-33MHz

- 4MB RAM
- 120MB Hard Drive
- 1.44MB Floppy
- LCD VGA Display
- and many features

$1925

Add-On Cards

16 BIT Arcnet Network Card	$ 69
16 BIT Ethernet Network Card	$ 95
IDE Controller w/ 2S, 1P, 1G Ports	$ 15
16 BIT VGA Card w/ 256K	$ 29
TVGA-8900C VGA Card w/ 1MB	$ 59
Orchid Fahrenheit Windows Accel. w/1MB (16.7M Col)	$175
Diamond Stealth 24X Win. Accel. w/1MB (16.7M Col)	$185

Network

- Novell Netware Lite
- Novell Netware V2.2
- Novell Netware V3.11
- Lantastic
- Network Installation
- Network Maintenance

Call

18759 Colima Road
Rowland Heights, CA. 91748
Tel: (818) 913-6555
Fax: (818) 913-5270

Business Hours:
Mon - Fri: 10 - 7
Sat: 10 - 6

CORPORATE ACCOUNTS WELCOME

* System Price Comparison Must Reflect Same or Equivalent Brands and Parts.

Terms & Conditions: All parts and systems carry a One Year Limited Warranty except monitors and printers which warrant by manufacturers. Prices and availability subject to change without notice.

13161 Brookhurst St.
Garden Grove, CA. 92644
Tel: (714) 537-3399
Fax: (714) 537-2521

Public Access To Public Records – Part II

These Columns Concern The Realistic Near Future.

BY JIM WARREN

This one continues a review of issues surrounding citizen access to one of the most valuable of taxpayers' assets—computerized information held by government agencies. Though this references the California Public Records Act (CPRA), the issues are

REALIZABLE FANTASIES

equally applicable to any local, state, or federal agency in a democratic society.

PRIVATE DATA COMMINGLED IN PUBLIC RECORDS

Citizens are increasingly concerned about government's compiling of personal information about themselves, and confidential information about their businesses. In California, the state constitution prominently includes a strong privacy assurance.

These privacy concerns apply equally to paper records and computerized records. However, computerized record-keeping can often protect—or endanger—privacy more than is possible with paper records.

In paper records, private information must be identified and deleted from a copy before its public components can properly be disclosed. In computerized records that commingle public with private data, it is usually straightforward to design data retrieval so that it provides the public components while protecting private data.

Some wish to provide copies of computerized public-records files *only* to a few, selected private corporations for semi-monopoly resale at high profit —profit far in excess of what they could gouge if files were available for the same price to all buyers.

NOT JUST WHAT DATA, BUT ALSO WHAT KINDS OF DATA?

Citizens are often suspicious as to exactly what types of confidential information are being collected by government. Thus, even if the *content* of such protected information is not disclosed, its *existence* and generic description *should* be disclosed as part of any public records statute. Similarly, the existence and description of most government databases should be public. This was the intent of the Privacy Act of 1974 requirement that most federal databases be disclosed in the *Federal Register*—though still ignored by about a third of federal databases sixteen years later (*Computers and Privacy*, GAO, August, 1990).

Copyright © 1993 by Jim Warren, 345 Swett Rd., Woodside, CA 94062; email/jwarren@well.sf.ca.us. Permission herewith granted to copy-in-full for any non-profit use.

SOFTWARE TO ACCESS PUBLIC DATA

Many government databases are custom-programmed by the record-holding agency or some cooperating agency. Although such software is created at public/taxpayer expense, the CPRA declares that, "Computer software developed by a state or local agency is not itself a public record under this chapter. The agency may sell, lease, or license the software for commercial or noncommercial use." [§6254.9(a)]

In other cases, the records are computerized using commercial software that may cost hundreds, even many thousands of dollars—especially true of some mapping and geographic information systems (GIS).

In the worst cases, government records are computerized using software customized by a private vendor *who retains exclusive proprietary control over the software*—and thus, in several ways, controls access to the data. Aside from creating public-access problems, this is a stupidly dangerous position for an agency to get into.

However, most programs include capabilities for outputting data in one or several more-or-less "standard" formats that can, in turn, be input to most other similar programs—text processors, desktop publishing programs, computer-aided drafting (CAD) systems, GIS systems, database management systems (DBMS), etc.

Citizens *should* be able to obtain copies of computerized public records in any machine-readable form that the agency's computer system can produce by operator command. If an agency cannot provide copies of public records in a customary data-exchange format, then it should provide a copy of the programs needed to access the public data, though they should not be expected to provide technical support or assistance.

If an agency chooses to use proprietary computer programs to process its public records, it should require the vendor of such programs to include the ability to output records—including all links

between data components—in a fully documented, nonproprietary format that does not require the vendor's computer programs for further processing. Agencies should do so for their own protection, as well as for public access.

CALCULATING COPYING COSTS FOR PUBLIC RECORDS

To recoup the expense of copying requested public records, agencies may charge "fees covering direct costs of duplication, or a statutory fee, if applicable" [CPRA §6257, in part]. However, some agencies are treating public records "sales" as income centers, charging far in excess of actual incremental copying costs. For such bureaucrats, "direct costs" needs clarification.

Agencies are not *required* to charge for copying public records. However, if they do, it should be no more than the fee the agency would internally charge to one of its departments or sections. It should be the *lowest* rate it charges its own departments, and what it charges, say, the Governor's office or a state legislative committee.

Also, requesters should be permitted to provide recording media—e.g., preformatted disks, or magnetic tape—to avoid agency charges for such media.

PROFITABLE PUBLIC RECORDS FOR LOOT-SEEKING BUREAUCRATS

Some funds-hungry bureaucrats rationalize their public-records profiteering by saying such records are "public assets" that can't simply be "given" away—like land, buildings, or equipment. They carefully ignore the fact that physical assets cannot be "copied" for trivial cost.

If this trend continues, access to public records may become very costly over the next few years, as most records become computerized.

Some bureaucrats say that the CPRA applies only to copies of *single* public records; that they can charge whatever the market will bear for *files* of public records in useful (computerized) form. They say private companies might profit from using such files; therefore (?) their agencies should get a cut of the action (my words; they are more diplomatic).

Worse still, some wish to provide copies of computerized public-records files *only* to a few, selected private corporations for semi-monopoly resale at high profit—profit far in excess of what they could gouge if files were available for the same price to all buyers. Some federal agencies are even paying for-profit information companies huge fees to access their *own* public records!

There is rarely dispensation for nonprofit organizations. (Voter registration files provided to established political parties without cost are an exception.)

Such profiting from public information is contrary to many traditions—and proposed legislation—regarding public data. E.g. the entire US Government Code is available from the GPO (Government Printing Office) on a CD-ROM for about $40.

Public records traditions focus on *public* access, not access limited to those who can afford high-profit fees.

Additionally, it sets dangerous precedent to have government demanding something under penalty of law—in this case, information—and then selling it for more than it costs to reproduce.

Some funds-hungry bureaucrats rationalize their public-records profiteering by saying such records are "public assets" that can't simply be "given" away—like land, buildings or equipment.

They carefully ignore the fact that physical assets cannot be "copied" for trivial cost.

MONITORING THE PUBLIC'S BUSINESS

In perhaps *most* cases, access to *aggregations* of public records on a given topic is much more valuable in reviewing the conduct of the people's business than is access to a few individual records, copied one at a time. Evaluating norms, trends, fair application of policies, etc.—and much, much more—all depend on access to, and analysis of, aggregated records; one-at-a-time access is virtually useless.

Aggregated public records should be as available as *individual* public records, and should be equally available to anyone; no special treatment for information profiteers.

ACCESS FOR THE COMPUTER-IMPAIRED

Like transportation at the turn of the century, computers are presently in a brief era when many citizens still cannot "drive" them. As with horseless carriages, many curse computers; some even fear them. Until average citizens are comfy with computers, accommodations for the computer-illiterate are necessary when public records are computerized.

When public data is stored in a central computer and retrieved via terminals, there should be terminals to which the public has access, and access delays should be no worse than if the records were stored and retrieved without computers.

In the case of records stored on small computers, paper copies and machine-readable copies on diskettes or other customary computer storage media should be readily available upon request. ■

Warren founded InfoWorld, Wireless Digital, Initiative, Inc. and one of the nation's largest public microcomputer conventions. He was founding host of PBS's Computer Chronicles, *founding editor of Dr. Dobb's Journal, and has chaired various trade and professionals' organizations. He holds graduate degrees in computing (Stanford), medical information science (UC Medical Center), and mathematics & statistics. He has been a computer professional since 1968, and was a mathematics teacher and professor for ten years before that.*

He organized and chaired the landmark First Conference on Computers, Freedom & Privacy (1991), sponsored by a dozen nonprofit civic, professional, and industry organizations, and received one of the first Electronic Frontier Foundation Pioneer Awards (1992). He is a member of the board of directors of Autodesk, Inc., and also chairs the Communications Committee of the California Public Records Act Reform Coalition.

BINOMIAL SYSTEMS

957 Fairway Drive, Walnut, CA 91789
Tel: (909) 595-8293 • Fax: (909) 598-4609

Store Hours:
Mon-Fri: 9am-6pm
Sat: By Appointment

SBT Accounting Software Packages
CORPORATION
SBT Authorized Dealer

ARTISOFT LANtastic™

Novell Certified NetWare Engineer™

NetWare Lite™ NANAO

STEALTH RAM ViewSonic®

MISCELLANEOUS PRODUCTS

486-50Mhz EISA Motherboard w/256K	1059.00	Boca Research 14.4KBPS Fax/Modem	239.00
486-50Mhz Motherboard w/256K	795.00	Diamond Stealth Super VGA Card	239.00
486-33Mhz Motherboard w/256K	615.00	Diamond Speedstar 24X VGA Card	179.00
386-40Mhz Motherboard w/64K	225.00	HP Laserjet 4	CALL
386SX-33Mhz Motherboard	159.00	Mylex EISA SCSI Cache w/512K	699.00
Adaptec 1522 SCSI Host Adapter	135.00	Smartlink 2400BPS Modem	42.00
Adaptec 1542 SCSI Host Adapter	269.00	Trident Super VGA Card w/1MB	69.00
Adaptec 1742 SCSI Host Adapter	449.00	Verbatim Magneto Optical Disk	139.00

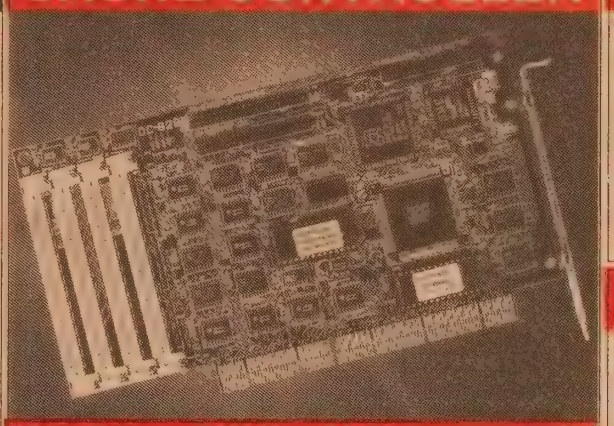
NETWORK PRODUCTS

Arcnet	
Addtron 8-bit Arcnet (Combo)	55.00
Addtron 16-bit Arcnet (Combo)	75.00
Thin Ethernet	
3Com® 16-bit Etherlink II	179.00
3Com® 16-bit Etherlink III	149.00
Addtron 8-bit Ethernet	79.00
Addtron 16-bit Ethernet (Novell Certified)	109.00
Addtron 16-bit Ethernet (3-in-1)	125.00
Addtron EISA Ethernet (3-in-1)	299.00
Addtron Pocket Ethernet	215.00
Artisoft Lantastic AE-2	229.00
Artisoft Lantastic AE-3	279.00
Intel 16-bit EtherExpress	139.00
SMC 16-bit Ethernet Card	139.00
10 Base-T	
3Com® 16-bit Etherlink IITP	179.00
3Com® 16-bit Etherlink IIITP	149.00
Addtron 8-bit 10 Base-T Ethernet	92.00
Addtron 16-bit 10 Base-T (Novell Certified)	119.00
Addtron Pocket 10 Base-T Ethernet	215.00
Pivotal 16-bit 10 Base-T Bus Mater	139.00
Network Hubs	
Addtron 8 Port 10 Base-T External Hub	335.00
Addtron 12 Port 10 Base-T External Hub	495.00
Addtron 8 Port Arcnet Active Hub	125.00
Addtron 4 Port Arcnet Passive Hub	15.00
Pivotal 4 Port 10 Base-T Internal Hub	269.00
Transievers/Repeaters	
Addtron 2 Port Ethernet Repeaters	459.00
Addtron 4 Port Ethernet Repeaters	695.00
Addtron Thin/Thick Tranceiver	59.00
Network Operating System Softwares	
Artisoft Lantastic AI v4.1	65.00
Novell NetWare Lite v1.1 w/DR-DOS 6	65.00
Novell NetWare 2.2 5 Users	505.00
Novell NetWare 2.2 10 Users	1095.00
Novell NetWare 2.2 50 Users	1995.00
Novell NetWare 3.11 5 Users	650.00
Novell NetWare 3.11 10 Users	1394.00
Novell NetWare 3.11 20 Users	1950.00
Microsoft Workgroup for Windows	75.00
Miscellaneous Network Softwares	
daVinci E-mail for DOS w/MHS	CALL
Intel LANProtect	715.00
Intel LANSight	298.00
Intel NetSatisFaxtion Server (unlimited)	720.00
Lotus cc:Mail	CALL
Softnet Fax Server (2 nodes)	149.00
Softnet Remote File Xchange	169.00
Symantec PC Anywhere 4.5 LAN	375.00
Miscellaneous Network Products	
25 Feet RG58 Coaxial Cable (Ethernet)	12.00
50 Feet RG58 Coaxial Cable (Ethernet)	22.00
25 Feet RG62 Coaxial Cable (Arcnet)	15.00
50 Feet RG62 Coaxial Cable (Arcnet)	28.00
Barrel Connector	1.75
BNC Connector	2.00
BNC Terminator	2.00
T-Connector	2.00

• **Call for customized network cables!!!** •

*All prices are subject to change without prior notice

CACHE CONTROLLER



VL-Bus IDE	249.00	ISA IDE	199.00
EISA SCSI	449.00	EISA IDE	229.00

* All controllers are upgradable to 16MB Memory *

SPECIAL OF THE MONTH

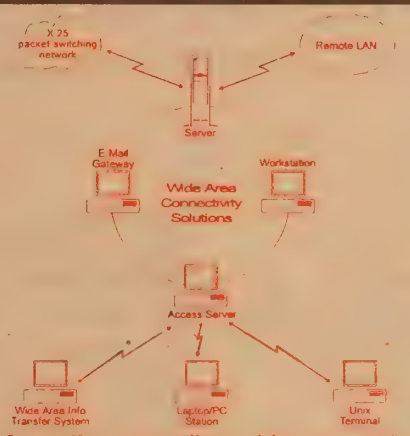
16-bit Ethernet Card (Coax)	79.00
16-bit 10 Base-T Card	79.00
3Com 8-bit Ethernet Card	59.00
3Com EISA Ethernet Card	269.00
Tiara 8-bit Arcnet Card	39.00
Racal 16-bit 10 Base-T	89.00
Racal 16-port 10 Base-T Hub	559.00

486SX/25 NOTEBOOK

- 4MB Memory (Upgradable to 12MB)
- 120MB Hard Disk
- 3.5" 1.44MB Floppy Drive
- 9.5" Mono LCD w/VGA 640x480
- Carrying Case w/Numeric Keypad

$$$ 1,650.00 $$$

WIDE AREA NETWORK



• *For information regarding wide area networking, please call...*

DO IT YOURSELF

8-bit Arcnet Card	224.00
16-bit Arcnet Card	289.00
8-bit Ethernet Card	306.00
16-bit Ethernet Card	314.00
8-bit 10 Base-T Card	312.00
16-bit 10 Base-T Card	339.00

• *Peer To Peer Networking* •

Complete package for connecting 2 computers using Novell NetWare Lite or Artisoft Lantastic AI. Includes peer-to-peer network operating system, 25 feet of coaxial cable and 2 network cards. For Microsoft Workgroup for Windows add 20.00 more.

UPS SYSTEMS

TRIPP LITE EST 1922
"THE POWER PEOPLE"

- Protect your valuable data with Tripp-Lite uninterruptable power supply!
- All Tripp-Lite UPS systems carry a full 2 years of manufacturer's warranty

Omni 1250 Lan	696.00
Omni 600 Lan	399.00
Omni 900 Lan	558.00
UPS Monitoring Software	59.00
BC-1250 Lan	520.00
BC-600 Lan	268.00
BC-900 Lan	382.00
Isobar 4 Ultra	44.00
Isobar 6 Ultra	55.00

SBT ACCOUNTING

Customized Software for Your Business

(Offer Leasing Program)

- Accounts Receivable
- Accounts Payable
- Sales Order
- Purchase Order
- General Ledger
- Payroll
- Manufacturing

The most flexible accounting packages ever written in dBase compatible languages that can be customized to meet your business requirements.

• ***Schools & Corporate P.O. are welcome!!!*** •

"ATC Computer has been selling low cost IBM Computer System for last 8 years."

"Check them out" *October, 1992 COMPUTER CURRENT*

Member of Better Business Bureau

GUARANTEED LOWEST PRICE

ATC Computer **Happy, Loyal Customers That's our Goal!**

Happy Customers List

- City of Los Angeles
- Department of Water & Power
- L.A. Police Department.
- XEROX
- U.C.L.A
- U.S.C
- Cal Tech
- KCBS
- KTLA
- METRO

ATC486-33

* INTEL 486DX-33 *
* Processor *

Reg. 1249/1199 Cash

ATC486-33cy

* Cyrix 486DLC-33 *
* Processor *

Reg. 999/949 Cash

All System Includes

* 64K Cache (Upgradable to 256K)
* 4MB RAM(Upgradable to 64MB)
* 120MB IDE Hard Drive (18ms access time)
* 1.2MB 5.25" Floppy Drive (Teac, or Mitsumi)
* 1.44MB 3.5" Floppy Drive (Teac, or mitsumi)
* SVGA Color Monitor
* SVGA Graphic Adapter
* 2 Serial / Parallel / Game Port
* Deluxe Mini-Tower Case
* 101 Enhanced Keyboard

ATC386-40

* AMD386DX-40 Processor

Reg. 949/899 Cash

ATC386sx-33

* AMD386sx-33 Processor *
* no cache / 2MB RAM *

Reg. 849/799 Cash

ATC486-40cy

* Cyrix 486DLC-40 *
* Processor *

Reg. 1049/999 Cash

Mother Board	
Edek 486DX-33 MHz (64K Cache)	120
Edek 486DX-33 MHz (256K Cache)	160
Edek 386DX-40 MHz (64K Cache)	95
Edek 386SX-33 MHz (No Cache)	110
Cyrix 486Dlc-33 MHz (64K Cache)	315
Cyrix 486Dlc-33 MHz (256K Cache)	365
Cyrix 486Dlc-40MHz(64k Cache)	375
Cyrix486Dlc-40MHz(256k Cache)	425
Memory	
1MB SIMM Module (70ns)	30
4MB SIMM Module (70ns)	145
IDE Hard Drive	
Maxtor 213MB (7213A)	365
Maxtor 130MB (7120A)	265
Connor 40MB (CP3000)	160
Connor 84MB (CP30084)	215
Connor 124MB (CP30104)	265
Connor 174MB (CP30174)	295
Floppy Drive	
Teac 1.2MB 5.25"	52
Teac 1.44MB 3.25"	47
Video Adapter	
Trident SVGA 16Bit 1MB 8900C "	55
Trident SVGA 1MB Hi Color(32K)	"85
Tseng Lab SVGA ET4000 1MB	"95
W.D.'s Windows Acc. Card w/1MB	125
Stealth VRAM w/1MB 32K Hi Color	250
Orchid Fahrenheit 1MB VRAM	245
Disk Controller	
IDE Hard/Flop./2 Serial/Parallel/Game	20
Monitor	
Sceptre Grayscale VGA Flat Screen	95
Neotec SVGA .28 Dot (1024x768)	265
Shamrock SVGA .28 Dot Non-Inter.	295

Tape Back-Up	
Colorado 120MB	195
Colorado 250MB	250
Colorado 700MB	775
250MB Tape Controller	175
Mouse	
True Mouse 600 DPI	20
Genius Clix Serial 200-3200 DPI	35
Genius GM-F302 Hi-Res 350-1050	50
Genius Ser. Mouse w/Windows 3.1	55
Hi-Point For Notebook	75
Mouse-one Serial	25
Logitech Mouseman Bus Card	95
Logitech Mouseman Serial	80
Logitech Trackman Serial	80
Microsoft Serial Mouse/Bus	95
CD-ROM	
Mitsumi CD-ROM Drive(340ms)	285
CD-ROM Software Bundle I	105
1.US Atlas 2.Languages of the World 3.Hawaii 4. Santa Fe 5.Game Pack	
CD-ROM Software Bundle II	115
1.Encyclopedia 2. Reference Library 3.US/World Atlas 4.Game Pack II 5.History of Science & Innovation	
CD-ROM Software Bundle III	95
1.Mammals 2. Time Almanac 3.CIA Fact Book 4.Golden Immortal 5. Jones in the Fast Lane(Game)	
Modem	
2400 Baud Internal Modem	35
9600 Fax 2400 Modem	65
9600 Fax 2400 Modem w/Window Fax	75
Smart One 1.4 with Fax/ Modem	245

L.A. Hours
M-F:9am-6pm
Sat:10am-5pm
Orange Hours
M-F:10am-6pm
Sat:10am-5pm

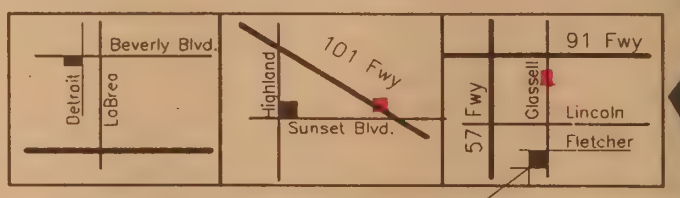
CD-ROM Software

Sell, Buy, Trade

Plug& Go Hard Drive

Transportable Hard Drive:

Connect an extra hard drive to your NOTEBOOK or LAPTOP!!



1 Year Parts & 2 Years Labor Warranty

Main Store
7150 Beverly Blvd.
Los Angeles, CA 90036
(213)938-6622

Hollywood Branch
6767 W. Sunset Blvd #23
Hollywood, CA 90028
(213)962-8610

Orange Branch
2440 N. Glassell Unit M
Orange, CA 92665
(714)974-9868

Prices subject to change without notice. Limited quantity, while supply last.

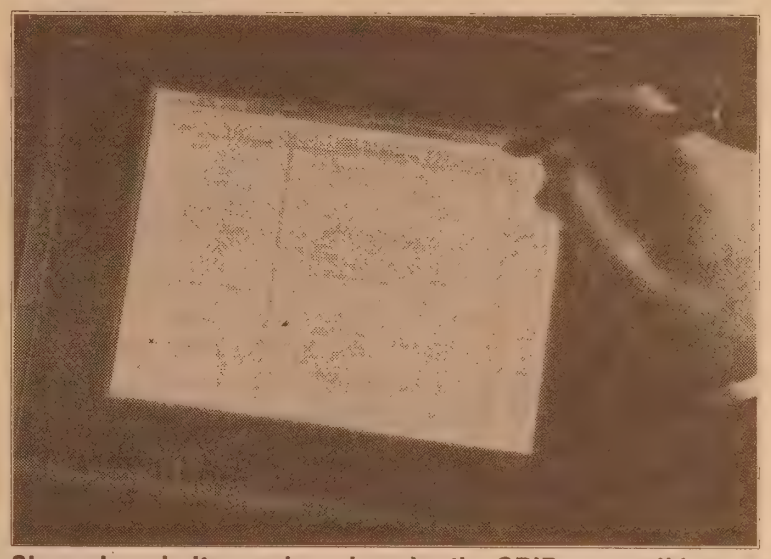
The GRiD 2260 Convertible

Plus: EO, GEOS, General Magic, And More...

BY MITSU HADEISHI

Pen-based technology is still in its infancy; products aimed at the consumer market, though they continually threaten to arrive at any moment, have not yet appeared on a mass scale.

In lieu of this, I finally decided to take a look at a real, shipping pen-based machine, in this case the GRiD 2260 Convertible, a dual-purpose "convertible" laptop/pentop computer. Admittedly, this computer is priced a bit high for the consumer market ($3495) if it were a pure pen-based machine; however, the machine doubles as a conventional laptop by simply flipping the screen up (a very clever feature).



Shown here in its pen-based mode, the GRiD convertible features a flip-up keyboard.

PENS AND PALMTOPS

The Convertible is representative of the current state of the art in pen-based computers, and many of the newer machines will use operating systems that currently run on these larger, higher-priced machines. For example, the "personal communicators" which will be created by companies such EO, Apple, Sony, Motorola, AT&T, and others (see below re: General Magic), will use pen-based operating systems such as PenPoint, Windows for Pens, and others, some of which are currently running on existing pen-based hardware such as the GRiD.

So let's take a look at the current state of the art.

THE GRID 2260

As shipped for review, the GRiD 2260 comes with a 25MHz 386SL processor with a CX87SLC numeric coprocessor, 4MB of RAM, a 130MB hard disk, a built-in internal 9624 fax modem (9600 baud fax, 2400 baud data), an external 3.5" floppy disk drive, and Microsoft Windows for Pens. Although it was supposed to come with some review software, it shipped with only the GRiD PenRight! demo; this was, however, sufficient for me to get a sense of the usability of the pen interface.

It comes with an easy-to-read sidelit 64 greyscale LCD display capable of displaying up to 640 x 400 pixels, which allows it to display VGA graphics (in greyscale, of course). The display is readable, although if you look closely there is a bit of an annoying "snow" effect, which makes it look as if certain pixels are fluctuating in brightness. (This doesn't happen over the entire display, I might note, only in areas which are using dither patterns and other non-flat areas of brightness.) It weighs in at 5.5lbs. with the lighter of the two battery packs that can be used with the unit, and measures 9.3" x 11.5" x 1.6".

Interfaces include a 9-pin serial port connector, an external VGA monitor jack, a phone jack (optional, but included in the shipped review unit) for the internal modem, and a parallel/external floppy port. Most notably, the unit ships with a PCMCIA 2.0 slot, allowing you to insert any one of a growing number of PCMCIA 2.0 cards now on the market.

With the standard battery pack, the unit is expected to operate for approximately two hours; with the more expensive (and heavier by 1/2lb.) battery pack, it's supposed to be able to operate slightly longer than three hours (this was not tested for this review).

WINDOWS FOR PENS

There are currently several pen-based operating systems vying for market attention, of which the two most prominent are GO Corporation's PenPoint and Microsoft's Windows for Pens. The GRiD Convertible came loaded with Windows for Pens, so that is the operating system which I will discuss here.

Windows for Pens has the advantage of letting you run any Windows application, even applications that were not originally designed for pen use. Critics of the operating system say that it is a kludge, and that an operating system such as PenPoint, built from the ground up for handwriting input, is better-suited for pen applications. Many reviewers, however, have suggested that both operating systems are currently at reasonably similar levels of functionality.

The pen, of course, takes the place of the mouse, and normal operations you'd perform with a mouse are quite straightforward under Windows for Pens; you can generally click, drag, select menu items, and so forth at least as easily as you can with a mouse. In particular, since the GRiD's screen is not touch-sensitive, but rather requires the use of an electronic stylus, this allows you to rest your hand on the screen as you write without causing the system to get confused. This makes usage of the stylus much easier than touch-screen implementations (such as that in the palmtop organizer reviewed last month, the Sharp OZ-9600).

Use of the pen in Windows for Pens does have a disadvantage relative to a mouse, however. Since you can't assume you have a keyboard, the pen serves two separate functions: a pointing and selecting device, and an input

RESOURCES:

Apple Newton
Apple Computer, Inc.
(408)996-1010

Business Card 2496c and 2496c+ PCMCIA 2.0 fax modem cards
OmniTel, Inc.
47281 Bayside Pkwy.
Fremont, CA 94538
(510)490-2202

EO Personal Communicator
EO, Inc.
800A East
Middlefield Rd.
Mountain View, CA
94043
(415)903-8100

Copyright © 1993 by Mitsu Hadeishi. All rights reserved.

RESOURCES:

GEOS
GeoWorks
2150 Shattuck Ave.
Berkeley, CA 94704
(510)644-0883

GRiD 2260 Convertible
GRiD Corporation
P.O. Box 612706
DFW Airport, TX 75261
1-800-654-GRID

PenPoint
GO Corporation
950 Tower Lane,
14th Fl.
Foster City, CA 94404
(415)345-7400

PenTOPS and PenCentral
Sitka Corporation
950 Marina Village Pkwy.
Alameda, CA 94501
(510)769-9669

Smart One 1442 PCMCIA Fax Modem
Best Data Products, Inc.
9304 Deering Ave.
Chatsworth, CA 91311
(818)773-9600

TeleScript and MagicCAP
General Magic
Mountain View, CA
(415)965-0400

Windows for Pens
Microsoft Corporation
P.O. Box 97017
One Microsoft Way
Redmond, WA 98052
(206)936-8080

device for text and graphics. This works fine as long as there is no ambiguity between the two; however, this is not always the case. For example, in a word processor, when you want to select a region of text, the natural thing to try to do is to click and drag the pen across the region of text you're interested in; unfortunately, what happens if you do this without being careful is that you just draw a diagonal line across your text. To select text instead of drawing a line, you have to click and hold the pen down until the cursor changes to the "select" mode arrow, then drag it. This tends to make using the pen a bit more cumbersome and inconvenient, and makes the overall feel of using the system a bit clumsy.

There is a little button on the supplied pen which doesn't seem to do anything as far as I can tell, but it might have been used to differentiate between selection-mode and draw-mode. That would make use of the pen as a combination input device a bit more convenient. It is possible, however, to adjust the delay for switching between writing and selection mode; adjusting it a bit faster tends to make operation a bit more intuitive and smooth, at least for this reviewer.

PENMANSHIP

The eternal question with pen-based machines is, how good is the handwriting recognition? Even if you print neatly, the handwriting recognition algorithms are not all that reliable; perhaps 95%–98% recognition in informal tests, after playing a little bit with the "training" application, which allows you to train Windows for Pens to recognize your particular handwriting a little bit better.

However, training or no, there are certain pen-marks that are fundamentally ambiguous; the letter "O" and the numeral "0," for example, or the lowercase letter "l," the numeral "1," and uppercase letter "I"; also, the software often seems to confuse the numeral "5" with the letter "S." In addition, the algorithm frequently confuses uppercase and lowercase letters (with the letters "S" and "O" in particular). To improve this situation will require more sophisticated context-sensitive AI than is currently used in Windows for Pens. Handwriting recognition algorithms, at least the one provided in the current release of Windows for Pens, have a long way to go before they're really ready for prime time (and by "reasonably good" I mean making no more than one error per paragraph at most).

However, you can address some of these problems without changes in technology by making special "artificial" changes to your handwriting to distinguish between the various ambiguous letters. Though this is far from ideal, if you really need to use a pen-based solution right now and you can't wait for smarter handwriting recognizers, training yourself a bit to change your handwriting style for the benefit of the pen computer you're currently using will let you use existing technology and still get the recognition rate up to a reasonable level.

DRIVING WITH THE TOP OPEN

The GRiD is unique among pen-based computers, because it has a keyboard hidden underneath the screen. To access it, you just press two tabs on each side of the screen and flip the screen up, and the screen then locks into place, revealing a full-sized notebook-class keyboard underneath. The keyboard is quite serviceable, and turns the unit into a full-blown notebook computer.

It is possible to attach an optional trackball or mouse to the system to use at the same time as the pen; however, if the mouse is attached, the pen interface does not work in some Windows applications that were not designed for use with the pen. When using the pen as a selection device with the keyboard, it is advisable to make the delay from writing to selection mode as short as possible.

GENERAL MAGIC

General Magic, an independent company originally started by Apple, formally announced its cooperation with the giants AT&T, Sony, Motorola, Philips NV, and Matsushita in a joint venture to help create what they call a family of products called "personal intelligent communicators" (PICs, known as the next generation in palmtops to you and me).

The firm has created a new command language called MagicCAP, and a communications protocol called TeleScript, which will allow PICs made by many different manufacturers to communicate with each other over a variety of different networks. All of General Magic's partners will be using the TeleScript protocol, ensuring that all the products made by these different manufacturers will be able to communicate with each other.

GEOS

GeoWorks, a graphical operating system originally implemented for the old Commodore 64, the Apple IIgs, and later reimplemented as a small, efficient windowing operating system for the IBM PC, is currently working on modifying and extending its operating system for the new generation of "consumer computing devices."

GEOS is small, fast, and will run effectively on machines with as little RAM as 512K. The system is a full-blown preemptive multitasking environment, which is remarkably useful in a handheld device, when you often want to switch back and forth between different applications without losing your place.

YET MORE PCMCIA FAX MODEMS

Those of you who own PCMCIA 2.0-compatible palmtop or laptop computers are certainly not wanting for fax modem cards, and Best Data Products, Inc., offers yet another with its Smart One 1442 PCMCIA 14.4bps V.32bis V.42bis fax modem. The suggested retail price for this card is $599.

OmniTel, Inc., has announced its Business Card 2496c and the Business Card 2496c+ PCMCIA 2.0 fax modem cards. The cards utilize V.42bis error and data compression protocols, and operate at 2400 baud for data and 9600 for fax transmission. The 2496c+ can be used in conjunction with the Spectrum Cellular AXSYS System for use with cellular phones. It also features the MNP 10 protocol, allowing it to operate under very poor line conditions. The 2496c retails for $349 with DOS software, $375 with Windows software, and the 2496c+ is $399 and $425 for the DOS and Windows versions, respectively. ■

CAD DRAFTING, PLOTTING & SUPPLIES
HEWLETT PACKARD
NOVELL
CADVANCE
AUTOCAD®
600 DPI DUO
HP LASERJET IV
ONLY $1390
HP DESIGNJET 600
FREE DEMO WITH YOUR FILE!
FREE ON-SITE SET UP/TRAINING
CALL FOR PRICING
SPECIALTIES
• Complete Solutions
• Home or Office
• Notebook Computers
• Cad Hardware & Software Experts
• Complete Drafting Service
• Manual or Cad (Autocad, Cadvance, Microstation)
• Experience in Architectural, Electrical, Mechanical and Plumbing
Lease and Financing Available!
Trademarks belong to their respective owners.
BUSINESS SOLUTION SPECIALISTS
LOGICACHE COMPUTERS, INC.
IBM COMPATIBLE MANUFACTURER/DISTRIBUTOR
SALES & SERVICE — CADD CONSULTING
HOURS: M-F: 9 am to 6 pm • Sat & Sun: By Appt. Only
TEL: (714) 855-1211
FAX: (714) 855-3892
22691 Lambert St., Suite 505
El Toro, CA 92630

MICRO DISCOUNT WAREHOUSE

• 7240 Jordan Canoga Park, California 91303
• 215 Park Ave. South New York, N.Y. 10003
Hours: 7am - 8pm Pacific Time

1-800-394-7006

DON'T BE FOOLED... OUR SYSTEMS ARE COMPLETE!

COMPUTER SYSTEMS

386SX-33 MHZ SYSTEM

- 386SX-33 Motherboard
- 2MB RAM
- 1.2 & 1.44 Floppy
- 80MB IDE Hard Drive
- AT IDE Host Drive
- VGA Video Card
- Mini Tower
- 14" VGA Color Monitor
- 101 Enhanced Keyboard
- DOS 5.0 Mouse & Windows

$995

386DX-40 MHZ SYSTEM

- 386DX-40 Motherboard
- 4MB RAM
- 1.2 & 1.44 Floppy
- 80MB IDE Hard Drive
- AT IDE Host Drive
- VGA Video Card
- Mini Tower
- 14" VGA Color Monitor
- 101 Enhanced Keyboard
- DOS 5.0 Mouse & Windows

$1195

486DX-33 MHZ SYSTEM

- 486DX-33 Motherboard
- 4MB RAM
- 1.2 & 1.44 Floppy
- 80MB IDE Hard Drive
- AT IDE Host Drive
- VGA Video Card
- Mini Tower
- 14" VGA Color Monitor
- 101 Enhanced Keyboard
- DOS 5.0 Mouse & Windows

$1595

HARD DRIVES

CONNER

CP3000	40MB	IDE	3.5"	**$165**
CP30084	80MB	IDE	3.5"	**$219**
CP30104	120MB	IDE	3.5"	**$279**
CP30174	170MB	IDE	3.5"	**$305**
CP3204F	213MB	IDE	3.5"	**$419**

FUJITSU

M2623T	425MB	IDE	3.5"	**$889**
M2623FA	425MB	SCSI	3.5"	**$899**
M2624T	520MB	IDE	3.5"	**$939**
M2624FA	520MB	SCSI	3.5"	**$979**

MAXTOR

MXT7080AT	80MB	IDE	3.5"	**$209**
MXT7120AT	130MB	IDE	3.5"	**$275**
MXT7213A	213MB	IDE	3.5"	**$370**
LXT340A	340MB	IDE	3.5"	**$599**
LXT340SY	340MB	SCSI	3.5"	**$599**

MICROPOLIS

MC 1684D	385MB	SCSI	5.25"	**$987**
MC 1624D	765MB	SCSI	5.25"	**$1199**
MC 1598D	1.2GB	SCSI	5.25"	**$1629**
MC 2112A	1.2GB	IDE	3.5"	**$1799**
MC 1924D	2.4GB	SCSI	5.25"	**$2979**

MOTHERBOARDS

386	SX	33	WITH	CPU	**$129**
386	DX	40	WITH	CPU	**$210**
486	SX	33	WITH	CPU	**$425**
486	DX	33	WITH	CPU	**$610**
486	DX	50	WITH	CPU	**$820**
486	DX	66	WITH	CPU	**$965**

WE WILL CONFIGURE TO YOUR SPECS!

IF YOU DON'T SEE IT, ASK FOR IT!

CD ROMS

TOSHIBA			
XM3401B	INT	200ms/PHOTO	**$511**
XM3401E	EXT	200ms/PHOTO	**$619**
PC/MAC KIT			**$115**

TAPE BACKUPS

ARCHIVE		**INT**	**EXT**
250MB	VIPER SCSI 6MB/SEC	**$439**	**$539**
525MB	VIPER SCSI 6MB/SEC	**$649**	**$749**
COLORADO			
120MB	IBM COMPATIBLE	**$199**	
250MB	IBM COMPATIBLE	**$255**	

CONTROLLERS

ADAPTEC		
1542	BK 16BIT 7HD/4FD	**$275**
1742	EISA 32BIT 7HD/2FD	**$470**
FUTURE DOMAIN		
TMC	850 8BIT	**$70**
TMC	1670 2HD/2FD	**$125**
TMC	1680 16BIT 7HD/2FD	**$279**
ULTRASTOR		
14F	HD/FD	**$330**
24F	HD/FD	**$495**
PROMISE TECHNOLOGY		
CACHING	16BIT 0MB TO 16MB	**$175**

MEMORY SIMMS

1MB X 9 (3CHIP)	70ns	**$33.00**
1MB X 9 (9CHIP)	70ns	**$35.50**
4MB X 9	70ns	**$135.00**

CALL FOR MAC PRICES

VISA, MASTERCARD, CORPORATE, GOVERNMENT & EDUCATION PURCHASE ORDERS ACCEPTED.

Prices and Availibility Subject to Change Without Notice.
Not Responsible for Typographical Errors.
Simms and Coprocessors Not Returnable.

No Surcharges for COD or Credit Cards.
We Check for Stolen Credit Cards.
RMA Required on Returns.

VISA MasterCard

IMMEDIATE DELIVERY: We Ship Within 24 Hours

PRODUCT KNOWLEDGE: Our Sales People & Technicians Will Provide The Most Cost Effective Drive Or Subsystem Solution.

Repair Service From The Twilight Zone

Before You Buy Your Next Portable Computer, Consider The Quality Of Service That Will Be Available If Something Breaks

BY ED KAHN

It is now more important than ever to consider the hidden costs of portable computing. In the old days, when prices were not much over $1000 for an acceptable portable computer, it was reasonable to buy a computer that had a good service policy of at least a year. Now, when you are spending considerably more, it is reasonable to expect service to be available for a much longer time. This means that you should find out *before* you buy what service will be like after the warranty period has expired. In practice, this can be extremely difficult—all manufacturers will assure you that post warranty service is no problem.

I recently came across a horror story that I think will be useful in helping you make your purchase decision. My friend bought a generic laptop machine that had the features she needed. It came with a full warranty, covering everything for the first ninety days. She figured that as long as the price was right, the machine would fit her needs. After all, if a machine works for ninety days, it will probably work for years. In general, this is true.

Unfortunately, after the warranty expired, she began to have problems. While the computer, in general, worked perfectly, she had problems when she tried to print, use an external monitor, or use the serial port. She phoned the manufacturer, who asked if the unit was under warranty. As it was not, they told her that for $75 they would look at the machine and give her an estimate. She talked a bit longer and asked what they thought was the problem. They said that their repair facilities were limited and that with these symptoms all they could do was swap the motherboard. This, they said, would cost about $700–$800.

Her stomach began to turn as she persisted in looking for an affordable solution. She learned the name of the actual manufacturer—these folks with their name on the machine do not actually make the unit, they simply market it under their name. Through a long distance phone call she was told that if the vendor—the company whose name appears on the computer—would not stand behind the machine, she was out of luck. While it was true that she was talking to the people who made her portable computer, they had no provision for providing service, and this was the sole responsibility of the company whose name appeared on the computer.

The long and short of the story is that my friend was the loser. While the right person could probably fix the machine, it seemed impossible to find that person. In reality, after the warranty period was over, the owner was left alone in the wilderness. This kind of thing would not happen with a desktop unit, but with a portable, generic parts simply will not do the job and only a specialized service man can perform most of the necessary repairs.

It was not worth it for my friend to spend half of what the machine originally cost a year ago to repair it. So last year's bargain turned out to be this year's expensive door weight. This story is not unique. As I checked into it, I found similar stories about manufacturers located in Taiwan or out of business.

Be careful of the small companies that may or may not be here to service your computer after the warranty expires. This is extremely difficult to check out before you buy. You must learn who actually makes the computer and who will provide the service. One possible conclusion is that buying from a nationally known company may be worth the extra bucks. With the price wars of the last few years, great bargains are available from companies like Dell, Zeos, Gateway 2000, Tandy, and others. Now even IBM is cutting prices to make their product competitive with the clones. You can be sure these horror stories will not be heard about the major players. The other side of the coin, however, is that some of the well-established companies charge a fortune for repairs after the warranty expires. The extra you pay up front may or may not turn out to be a bargain in the end. Some well-known manufacturers pride themselves in keeping your computer in service for years, while other expensive computers are well known to be expensive to maintain after the expiration of the warranty. In making your purchasing decision, look beyond the initial price and length of warranty. See how much support there will be after the warranty period is over. This factor may well determine how long your computer will last.■

In making your purchasing decision, look beyond the price and warranty. See how much support there will be after the warranty period is over.

Copyright © 1993 by Ed Kahn. All rights reserved.

RANTEK

Computer Center
22129 Sherman Way, Canoga Park, Ca. 91303

Sales
(818) 347-1100
Service
(818) 347-5225

AST 486-33DX

486-33MHz, 8MB RAM, 210MB Hard Drive, 1.44MB 3.5" Floppy Drive, 1MB SVGA Card, 101 Enhanced Keyboard, 14" SVGA .28 Dot Pitch Monitor, DOS 5.0, Windows 3.1, and a Mouse.

$2,999.00

Ask the Specialists at Rantek what it would take to Upgrade your Current Computer System.

AAMAZING 17" MONITOR

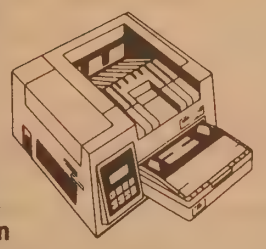
1280 x 1024 Resolution, .26 Dot Pitch, Full Screen Display, Non-Interlaced, 72Hz Refresh, Tilt & Swivel Base, Ajustable Screen Display, and a LCD Display that tells you what resolution you are using as well as the current refresh rate.

$899.00

OL400 OKIDATA OL830

$629 !!

- 4 Page Per Minute
- 300 Dots Per Inch
- 17 Resident Fonts
- 200 Sheet Paper Tray
- HP Series II Compatible
- Slim, Low Profile Design



$1329!!

- 8 Page Per Minute
- 300 Dots Per Inch
- 2 Megabytes RAM
- 17 Scalable Fonts
- 200 Sheet Paper Tray
- HP Series II Compatible

5 Year Warranty on Printhead
1 Year Warranty on Parts & Labor
Best Priced Entry Level Laser Printers Available!
Ours Include Toner and Paper Tray!

GRAPHICS SYSTEMS

$2299.00

486-66DXII, 4MB RAM, 1.2MB & 1.44MB Floppy Drives, 213MB Hard Drive, 14" SVGA Non-Interlaced .28 Dot Pitch Monitor, 1MB S3 SVGA Diamond Stealth 24 Bit Video Card, 1 Ser/ 1 Par/1 Game port, Mini Tower or Desk Top Case, DOS 5.0, Windows 3.1, Hi-Resolution Mouse, and Mouse Pad. (All Software comes with original disks, documentation, and warranty cards.)

ATI Graphics Pro 2.0Mb Upgrade	$400
Aamazing 17" 1280 x 1024 Upgrade	$600
Mitsubishi DiamondScan 20" Upgrade	$1650

386-40 MHz

386-40 MHz, 4MB RAM, 120MB Hard Drive, 1.2MB & 1.44MB Floppy Drives, SVGA Monitor w/.28 Dot Pitch, 1MB SVGA Video Card, 101 Enhanced Keyboard, 2 Serial/1 Parallel/1 Game port, Desk Top or Mini Tower Case, DOS 5.0, Hi-Resolution Mouse, and Mouse Pad. (All Software comes with original documentation and registration cards.)

$1299.00

PRINTERS

Okidata ML 320 9Pin Narrow	329
Okidata ML 321 9Pin Wide	479
Okidata ML 380 24Pin Narrow	239
Okidata ML 590 24Pin Narrow	499
Okidata ML 591 24Pin Wide	669
OkiLaser OL 400 4-6ppm HP 17 Fonts	599
OkiLaser OL 810 8ppm HP 26 Fonts	1099
OkiLaser OL 830 Postscript 8PPM	1299
OkiLaser OL 840 PostScript / HP 2Mb	1599
Okidata Laser Toner (All Models)	29
Okidata Image Drum (400 & 800)	225
SilentWriter II Model 95	1499
2Mb RAM 35 PostScript Fonts	
100% HPIII Compatable!	
Canon BJ-10ex 64Jet 84CPS 360dpi	329
Canon BJ-200	375
Canon BJ-330 600CPS 360dpi Wide	649
Canon LBP-4 4PPM 300dpi Laser	999
Canon BJ-800 Color InkJet	1999
Citizen 200-GX 9-Pin	189
Citizen GSX-230 24-Pin Narrow	299
Citizen GSX-240 24-Pin Narrow	399
Citizen GSX-145 24-Pin Wide	399
Citizen GSX-240/200-GX Color Option	69
Citizen GSX-145 Color Option	69
HP LaserJet Series 4	1425
HP LaserJet Series 4M PS	1950
HP LaserJet II, III, IIID Toner	89
HP LaserJet IIP/IIIP Toner	79
HP DeskJet 500	399
HPDeskJet 550C	725

MONITORS

CTX 5468 1024x768 .28 14"	299
CTX 5468NI 1024x768 14"	349
Aamazing 17" 1280x1024 .26 D.P.	899
Aamazing 20"	1399
Nanao T550i	1199
Nanao T560i	1995
Nanao T660i	2799
NEC 3FGX	699
NEC 4FG 15" Flat	799
Magnavox 20"	1399
Idek 5117	975
Idek 5217	999
Inovision - Mag MX 15F	699
Inovision - Mag MX 17F	1375
Samtron 14" Mono Flat	109
Sony 1304 1024x768 .25 14"	649
Sony 1604 1024x768 .25 17"	1099
ViewSonic 5E	475
ViewSonic 6 14" 1024x768 NI	375
ViewSonic 7 17"	1295
ViewSonic 8 20"	1799

VIDEO CARDS

ATI VGA Wonder XL24 1MB	199
ATI Graphics Ultra + 1MB/2MB	349/399
ATI Graphics Ultra Pro 1MB/2MB	499/575
Diamond Stealth 1MB	229
SpeedStar 24X	189
Monographics w / LPT Port	29
Diamond Stealth (Local Bus) 1MB	219
Trident (1Mb)	89

MODEMS

24/96 Modem w/Fax Int./Ext.	99
Boca 14.4K/96 Modem w/Fax Int./Ext.	299/349
Smart One 2400B Int./Ext.	69/89
Ven-Tel 24/96 Pocket Modem w/Fax	149

CD ROMs

Sony 535 (Int./Ext.)	399/475
Sony 541(Int.)	575
Sony 7211 (Ext.)	725
Sony 541/7211 SCSI Interface	150
NEC CDR84M (Int.)	595
Sony CD Caddies	20

MEMORY

HP III Memory Board 0Mb	49
1Mb Memory for HP Boards	48
Okidata OL400 w1Mb RAM	99
Okidata OL800/820 w 0Mb RAM	99
1Mb for All Oki Memory Boards	48
DFI Megalith + Memory Expansion Board	129

Because Service Doesn't Stop at the Cash Register

SPECIAL: *VESA LOCAL BUS SYSTEM*

•4MB RAM Up To 32MB •SVGA Monitor (0.28 DPI)
•1.2MB & 1.44MB FDD •Mini Tower Case
•125MB Hard Drive •Keyboard & Mouse
• VESA Local Bus 1M SVGA 32 Bit Card

486DX-33MHz $1449
486DX-50MHz $1599
486DX2-66MHz $1699
486DX2-50MHz $1529

486DLC-33MHz

• CYRIX 486DLC-33MHz CPU w/Math Co-Processor
• 4MB RAM
• 1.2 & 1.44MB FDD
• 130MB HDD
• SVGA Card w/1MB
• SVGA Monitor (0.28dpi) (1024x768)
• AT I/O Card
• Mini Tower Case
• 101 Enhanced Keyboard

$1199

486DX-33 (Intel) . $1299
486DX-50MHz $1549

386DX-33MHz

• 80386DX-33MHz CPU
• 4MB RAM
• 1.2 & 1.44MB FDD
• 80MB HDD
• SVGA Card w/1MB
• SVGA Monitor (0.28dpi)
• AT I/O Card
• Mini Tower Case
• 101 Enhanced Keyboard

$949

386DX-25MHz $929
386DX-40MHz $969

386SX-25MHz

• 80386SX-25MHz CPU
• 2MB RAM
• 1.2 & 1.44MB FDD
• 40MB HDD
• VGA Card w/ 256K
• VGA Monitor
• AT I/O Card
• Mini Tower Case
• 101 Enhanced Keyboard

$739

386SX-33MHz $749

MULTI-MEDIA

• **680MB Sony CD-ROM** **$319**
• **Sound Blaster Pro** **$169**
• **80 Watt Amp. Speaker** **$59**
• **Packaging** **$529**

MEMORY

SIM 256-08ns	$9.90
SIM 256-07ns	$10.50
SIM 256-06ns	CALL
SIM 1M-08ns	$33
SIM 1M-07ns	$35
SIM 4M-08ns	CALL
SIM 4M-07ns	CALL

HARD DISK DRIVE

20MB HDD	$95
40MB HDD	$159
80MB HDD	$195
125MB HDD	$239
213MB HDD	$359

MONITOR

SVGA (0.28dpi)	$247
SVGA (0.39dpi)	$219
VGA (0.42dpi)	$199
Monochrome	$89

ADD-ON CARD

SVGA w/1MB	$59
VGA w/512K	$39
VGA w/256K	$27

IDE CONTROLLER

AT I/O	$13
Modem	$45
Fax/Modem	$75

FINANCING AVAILABLE!

A & P Computers

16717 Norwalk Blvd. • Cerritos, CA • 90701
TEL (310) 921-7156
FAX (310) 802-9218

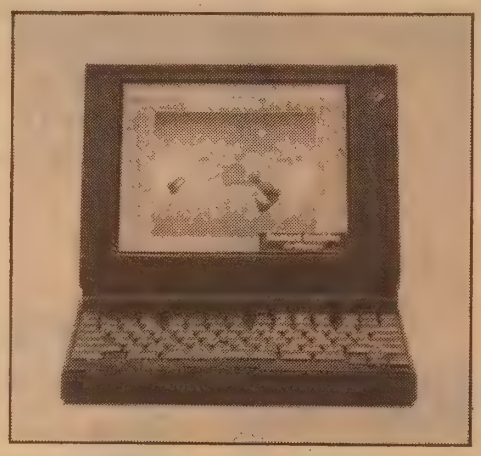
MasterCard VISA

Prices subject to change without notice

RESOURCES:

ThinkPad 700C, $4,350
IBM Corp.
1133 Westchester Ave.
White Plains, NY 10604
1-800-765-4IBM

COMPUTER Of The Month:



Think Pad 700C

IBM ThinkPad 700C

I never thought I would be heaping praises on an IBM laptop. For so long they just could not seem to get it right. But now, IBM has the product to beat. This is a fast, perfectly designed color notebook powered by a 486SLC processor running at 25MHz. The processor can be upgraded to a 50MHz model ($595). This computer is not revolutionary. Rather it is a fairly conventional product that simply has executed nearly everything to perfection.

IBM has finally listened to the marketplace and designed a computer that people want. At almost every turn, IBM has made the right choices in design choices. Although this is not the lightest unit on the market, no features have been compromised. With the introduction of pocketbook size computers, I see no reason for manufacturers to continue to eliminate things many of us want simply to achieve a smaller size. The portable market offers so many options that each customer can balance the various tradeoffs. I am personally glad to see a machine that offers the features I want in a reasonably sized unit. This computer weighs 7.7lbs. with the rechargeable battery pack. It measures 11.7" x 8.3" x 2.2", large enough to accommodate a decent keyboard and display. The basic model of the ThinkPad comes with a 120MB hard disk, which is removable for either security or upgrade purposes as well as to accommodate different users of a single machine. It comes with 4MB of RAM, expandable to 16MB. Expansion is done by adding DRAM cards, which fit neatly into slots on the side of the machine. Prices go from $245 for 2MB cards all the way up to $945 for 8MB cards. The computer can hold two cards in addition to the built-in memory.

The 700C offers a 10.4" display, measured diagonally. The active matrix LCD offers the most beautiful color I have seen to date on a portable. If you need a larger screen, you still have the option of connecting a VGA monitor through the video port located on the back of the machine. If you need, you can display on both an external monitor and the built-in LCD display simultaneously.

The keyboard is as good as most portable units, although I still prefer the layout of Toshiba and Dell portables to this. But that is merely a matter of preference. If you prefer, you can attach either an external numeric keypad ($80) or a PS/2 keyboard of your choice.

The most noteworthy addition to the keyboard is the inclusion of a unique pointing device IBM refers to alternately as either a pointing stick or TrackPoint II. This is a device about the size of a pencil eraser. It is located between the G, H, and B keys and works better than any mouse I have tried. You push the head in the direction you want the pointer to go. The harder you push, the faster it goes. Two buttons at the bottom of the keyboard serve as mouse buttons. This completely eliminates the need for a surface for the mouse and makes using either Windows or OS/2 simple in "On the Go" settings.

Battery operation is limited to only two or three hours—which is not too bad for a color system. Offsetting this, however, is the ability to recharge a battery pack in about an hour and a half. You can purchase additional battery packs ($175). Sophisticated power management allows you to control many features to lengthen the time a battery will power the computer.

The 700C comes with a serial port, a parallel port, and the option of a built-in fax/modem ($365). For those who need more expansion capabilities, an expansion unit ($895) is available. The computer plugs into this unit, which has a couple of expansion slots, an extra bay, and SCSI capability.

Although IBM wants you to buy OS/2 ($195), they will deliver the machine with IBM-DOS 5.0 and ready for Windows. The documentation is clearly written and covers all of the basics. A final bonus is that IBM offers a warranty unlike any I have seen. The machine is covered for three years, internationally. In addition, there is a 24-hour, seven days a week, toll-free number to call for support. And finally, IBM offers a 30-day, quibble-free money back guarantee. If your experience is anything like mine, they will have a hard time getting the machine back in thirty days. ■

Selcor
DIRECT
1900 S. Norfolk, Suite 322
San Mateo, CA 94403
(800) 777-7058
(415) 578-1165 FAX

There's An EXP Dealer Near You!

GreyStone Technology
30A Knowles Dr.
Los Gatos, CA 95030
(408) 866-4739

BCSA Computers
8A Commercial Blvd.
Novato, CA 94949
(415) 883-7392

Micromatics
3442 De La Cruz Blvd.
Santa Clara, CA 95054
(408) 970-8566

Dealer Incentive Program Available for Qualified Resellers!

If you are a reseller looking to enhance your product line, take advantage of Selcor Directs' value added reseller program including regional advertising and technical support and favorable

Toll Free! 800 777-7058 Dealer Info!

Selcor Direct's PRODUCT SPOTLIGHT!

EXP

Selcor Direct's Monthly Spotlight to the Best Values in Silicon Valley!

Need More MEMORY for Your Notebook? EXP Offers the Best Value, Affordably Priced, Solution Available Today.

EXP and Selcor WILL NOT BE UNDERSOLD! MEMORY MODULES FOR ALL NOTEBOOKS & LAPTOPS. 1 TO 16 MB MEMORY CARDS AVAILABLE NOW FOR ALL BRANDS!

Prices as low as

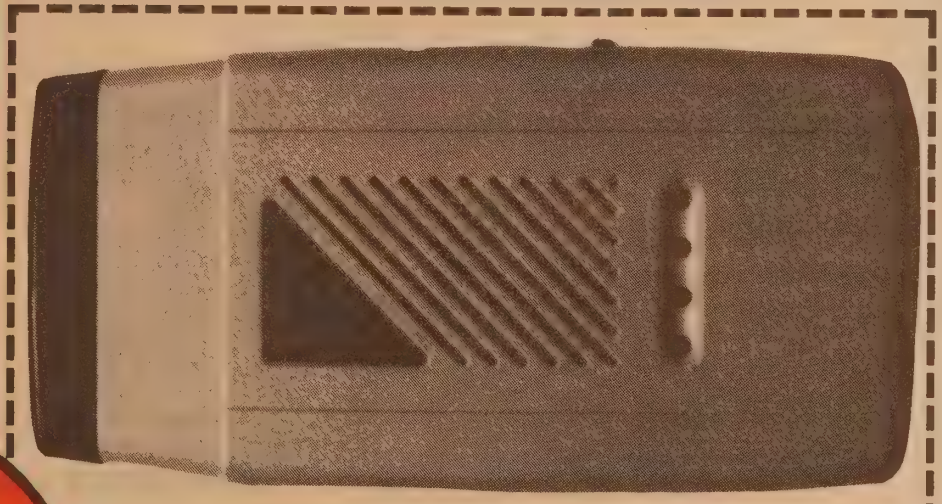
$39

TOSHIBA • AST • COMPAQ
HEWLETT PACKARD
APPLE • MOST CLONES...

Try Cutting This Picture Out and Placing It In Your Pocket.

Nu Laser

(Modem shown at actual small size.)



This tiny pocket size fax/modem is a high performance send and receive fax with full duplex 2400bps modem. As a result of comprehensive research and engineering, it will support most of today's popular communications software.

Package includes:
- BitCom Fax & Data Software
- Auto-dial, auto-answer, auto-speed selection
- Built-in speaker with volume control
- Four phone number memory ea. up to 33 characters
- LOW POWER CONSUMPTION
- 9600/7200/4800/2400bps synchronous communication
- Receiving and sending a fax in the background
- One step convert and send
- FCC Class B approved

Only **$69.95** reg. $119

High Speed Communications Center!
14.4K Bis Data/Fax Modem
$189.00

Selcor Direct

"We're Looking For a Few Good Dealers"

(800) 777-7058

HIT IT BIG WITH
Quality, Price and Services

Free Extras With Systems

80486 Systems:

1. Programmable keyboard allows you to set up your "HOT" keys.
2. Mini tower case with second cooling fan and UL approved power supply.
3. Super VGA card w/1MB RAM, displays 24 bit true color (16M).
4. Free 5-outlet power center for your convenience.
5. Free dynamic high resolution mouse with mouse pad.
6. CPU cooling fan for 66 and 50MHz.

80386 Systems:

1. Free 5-outlet power center for your convenience.
2. Free dynamic high resolution mouse with mouse pad.

FREE EXTRAS

DEMO ON DISPLAY

Digitech Group's Warranty:

1. 1 Year Parts Warranty
2. 2 Years Labor Warranty
3. Lifetime Technical Support
4. Custom Configuration

Terms and Conditions:

All parts and systems carry a one year limited warranty except for monitors and printers which are warranted by manufacturers. Any consumable products are not returnable nor refundable. Any opened software is non-refundable. All sales on monitors and printers are final. Repairs need to be sent to the manufacturer. No refund. All returns are subject to our approval and must have prior authorization, return items must be in their original condition with invoice. Send shipping prepaid. All refund items must be returned within 14 days of invoice and a 20% restocking fee will be charged after the 14 day period and within 30 days of invoice. Thereafter only exchanges and repair for the rest of the warranty period. Price, specification and availability subject to change without any notice.

80486 EISA LB System (Made in USA)

	Regular	Cash
DX2-66MHz	$1995	$1925
DX-50MHz	$1895	$1825

- EZ Switch CPU Socket
- 256KB Fast Speed Cache
- 8MB 70ns System RAM
- 1.2MB/1.44MB Floppies
- 32 Bit EISA IDE Controller
- 32 Bit True Color SVGA Card w/1MB
- 250MB 14ms IDE Hard Disk Drive
- Mini Tower Case w/2nd Cooling Fan
- 2 Serial/1 Parallel/1 Game Ports
- 104 Key Programmable Keyboard

80486 VESA LB System

	Regular	Cash
DX2-66MHz	$1570	$1515
DX-50MHz	$1460	$1410
DX-33MHz	$1295	$1250
SX-25 MHz	$1195	$1155

- VESA LB w/256KB Cache
- 4MB 70ns System RAM
- 1.2MB/1.44MB Floppies
- 32 Bit VESA LB SVGA Card w/1MB
- 32 Bit VESA LB IDE Controller Card
- 170MB 14ms IDE Hard Disk Drive
- Mini Tower Case w/2nd Cooling Fan
- 2 Serial/1 Parallel/1 Game Ports
- 104 Key Programmable Keyboard

80486 ISA System

	Regular	Cash
DX2-66MHz	$1475	$1420
DX-50MHz	$1365	$1315
DX-33MHz	$1195	$1155
SX-25MHz	$1065	$1030

- ISA MB w/256KB Cache
- 4MB 70ns System RAM
- 1.2MB/1.44MB Floppies
- 16 Bit SVGA Card w/1MB
- 16 Bit IDE Controller Card
- 120MB 15ms IDE Hard Disk Drive
- Mini Tower Case w/2nd Cooling Fan
- 2 Serial/1 Parallel/1 Game Ports
- 104 Key Programmable Keyboard

80386 ISA System

	Regular	Cash
DX-40MHz	$785	$760
Cyrix 486DLC 33MHz	$935	$915

- ISA MB w/128KB Cache
- 4MB 70ns System RAM
- 1.2MB/1.44MB Floppies
- 16 Bit SVGA Card w/1MB
- 85MB 16ms IDE Hard Disk Drive
- Mini Tower Case w/200W PS
- 2 Serial/1 Parallel/1 Game Ports
- 101 Key Keyboard

80386SX ISA System

	Regular	Cash
SX-40MHz	$545	$525
SX-33MHz	$520	$505

- 2MB 70ns Cache
- 1.44MB Floppy
- 16 Bit SVGA Card w/1MB
- 101 Key Keyboard
- 40MB IDE Hard Disk Drive
- Mini Tower Case w/200W PS
- 2 Serial/1 Parallel/1 Game Ports

Monitors and Upgrades

• Viewsonic 6FS 15" 1280 x 1024 LR, Flat Screen	$575
• CTX 1560 15" 1280 x 1024 LR, Flat Screen	$465
• Viewsonic 6E 14" 1024 x 768 NI	$330
• 14" 1024 x 768 .28mm NI	$295
• ATI Ultra Pro VLB w/2MB RAM	add $350
• Diamond Stealth 24 VLB w/1MB RAM	add $95
• Diamond Stealth 24 ISA w/1MB RAM	add $95

DIGITECH SYSTEMS

Over 7 Years in the Industry. Growing Gradually with Success.

Motherboards (w/CPU)

	Regular	Cash
VESA LB 486DX2-66 w/256KB Cache	$780	$745
VESA LB 486DX-50 w/256KB Cache	$670	$635
VESA LB 486DX-33 w/256KB Cache	$505	$485
VESA LB 486SX-25 w/256KB Cache	$385	$360
EISA LB 486DX2-66 w/256KB Cache (w/32 bit SVGA 1MB True Color 16M Card)	$1000	$955
EISA LB 486DX-33 w/256KB Cache (w/32 bit SVGA 1MB True Color 16M Card)	$730	$690
ISA 486DX2-66 w/256KB Cache	$765	$725
ISA 486DX-50 w/256KB Cache	$650	$610
ISA 486DX-33 w/256KB Cache	$480	$455
ISA 486SX-25 w/256KB Cache	$365	$345
ISA 486DLC-40 w/256KB Cache (w/CYRIX FastMath Chip)	$415	$390
ISA 486DLC-33 w/256KB Cache (w/CYRIX FastMath Chip)	$375	$355
ISA 386DX-40 w/64KB Cache	$180	$170
ISA 386DX-33 w/64KB Cache	$170	$160
ISA 386SX-40 w/o Cache	$120	$110
ISA 386SX-33 w/o Cache	$105	$95

Math Coproc. and RAM's

	Regular	Cash
80387-40MHz Math Coproc.	$95	$90
80387-33MHz Math Coproc.	$90	$85
80387SX-33MHz/25MHz Math Coproc.	$75	$70
4MB x 9 or 4MB x 3 60ns SIMM	$165	$155
4MB x 9 or 4MB x 3 70ns SIMM	$140	$133
1MB x 3 60ns SIMM	$40	$37
1MB x 3 70ns SIMM	$35	$33

SVGA Display Cards

	Regular	Cash
ATI Ultra Pro VESA LB w/2MB	$450	$425
ATI Ultra Pro EISA LB w/2MB	$450	$425
ATI Ultra Pro ISA w/2MB	$335	$325
Diamond Viper S3-805 w/2MB	$450	$425
Diamond Stealth VESA LB w/1MB	$195	$185
Diamond Stealth 24 w/1MB	$165	$160
VESA LB 32 Bit SVGA Card w/1MB	$110	$105
WD P1DFW Windows Accel. w/1MB	$110	$105
Trident 8900C w/1MB	$63	$60
VGA 256KB 16 Bit	$27	$25
VGA 512KB 16 Bit	$42	$40

Monitors

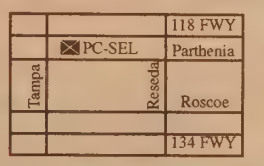
	Regular	Cash
Viewsonic 7 17" 1280 x 1024 LR Flat	$995	$975
Viewsonic 6FS 15" 1280 x 1024 LR Flat	$575	$565
Viewsonic 6E 14" 1024 x 768 NI	$330	$320
CTX 1760DF 17" 1280 x 1024 LR Flat	$865	$845
CTX 1560 15" 1280 x 1024 LR Flat	$465	$455
CTX 1461 14" 1280 x 1024 NI 72Hz	$330	$320
14" 1024 x 768 .28mm NI	$295	$285
14" 1024 x 768 .28mm INT	$275	$265
14" 1024 x 768 .39mm	$230	$220

Disk Drives & TBU

	Regular	Cash
Teac 1.2MB/1.44MB Combo in One	$130	$125
Teac 1.2MB/1.44MB (ea. set)	$103	$100
Teac 2.88MB 3.5"	$90	$87
Mitsumi 1.2MB/1.44MB (ea. set)	$95	$92
40MB 25ms IDE	$145	$140
80MB 18ms IDE	$195	$190
120MB 15ms IDE	$245	$235
170MB 15ms IDE	$260	$250
210MB 15ms IDE	$355	$335
250MB 15ms IDE	$375	$355
340MB 14ms IDE	$585	$560
510MB 13ms IDE	$900	$875
Colorado DJ10 120MB TBU	$190	$180
Colorado DJ20 250MB TBU	$225	$215

ATLANTIC COMPUTER SYSTEMS
376 Lemon Creek Drive, Unit F, Walnut, CA 91789
Tel: (909) 468-1368 Fax: (909) 468-1366
M-F 9:00AM - 6:00PM Sat. 10:00AM - 3:00PM

PC-SEL INC
19201 Parthenia Street, Suite E, Northridge, CA 91324
Tel: (818) 998-1988 Fax: (818) 998-6558
M-F 9:00AM - 6:00PM Sat. Appointment Only



LINTEK COMPUTERS INC.
1308 E. Katella Ave., Anaheim, CA 92805
Tel: (714) 939-9868 M-F 9:00AM - 5:30PM
Fax: (714) 939-9302 Sat. Appointment Only

ADD-ON Cards

	Regular	Cash
VESA LB 32 Bit IDE w/I/O	$60	$57
VESA LB SCSI Controller Card	$335	$320
EISA IDE Controller Card (DTC2290)	$120	$115
EISA IDE C.C. w/1MB Cache	$250	$240
EISA SCSI C.C. (DTC3292)	$330	$315
ISA IDE C.C. w/1MB Cache	$165	$155
ISA SCSI2 C.C. w/1MB Cache	$325	$310
ISA IDE w/IO Card	$20	$18
ISA 2.88M IDE w/IO	$65	$60
ISA AT I/O	$12	$10
Parallel Card for Printers	$10	$9
Hi Speed 16550 AT I/O Card	$40	$35

Input Devices

	Regular	Cash
142 Key Programmable Keyboard	$65	$62
104 Key Programmable Keyboard	$50	$47
FK9000 128 Key Programmable	$65	$62
FK2001 101 Key Click Keyboard	$40	$37
Chicony 5181 101 Key Soft Click	$29	$27
BTC7000 101 Key Soft Touch	$29	$27
Microsoft (OEM) Serial Mouse	$55	$52
Logitech Serial Mouse	$60	$57
A4 Serial Mouse, HiRes	$18	$16

Multi-Media Products

	Regular	Cash
Micro Video Controller Card (Motion Video Card for Your PC)	$375	$350
Micro TV Tuner (Display TV Program on Your PC)	$195	$180
Sound Blaster Pro Basic w/2 CD Titles	$175	$165
Multimedia Upgrade Kit (Include Sound Blaster Pro Basic, Sony CDR31A and 6 CD Titles)	$475	$455

CD-ROM's

	Regular	Cash
Mitsumi CD-ROM w/C.C. (350ms)	$215	$200
Sony CDR 31A w/C.C. (480ms)	$265	$250
NEC CDR84 w/C.C. (280ms)	$575	$560

(MPC compatible, support Kodak photos, CD standard)

CD Titles

	Regular	Cash
Encyclopedia 92 American Academy	$55	$50
Reference Library 2.0	$35	$32
Books of Mammals	$45	$40
CIA World Fact Book	$20	$18
Time Table History	$35	$32
Magazine Rack	$30	$27
Time Comp. Almanac	$35	$32
Wing CMDR/Secret Mission	$40	$36
Great Cities of the World	$40	$36
US Atlas w/Auto Map	$30	$27
Wing CMDR/Ultima VI	$35	$32
Chessmaster 3000 (MPC)	$30	$27
Microsoft Bookshelf (MPC)	$85	$80
Microsoft Works (MPC)	$75	$70

VISIT OUR SHOWROOM

WE GOT THE POWER!! CALL NOW!!

WE WILL BEAT ANY ADVERTISED PRICE

BLUE CHIP AUTOMATION

THE ULTIMATE SOURCE

ONE YEAR PARTS & LABOR WARRANTY

LIFETIME TECHNICAL SUPPORT! NO LABOR CHARGES FOR FUTURE UPGRADES!!

FINANCING AVAILABLE!

CAD STATION PLUS

486/50MHz EISA

- 8MB RAM Exp. to 64MB
- 1.2 & 1.44 Floppy Drives
- 210MB Hard Drive
- EISA Controller
- EISA S-3 Graphic Card
- 2 Serial/1 Parallel
- Full Tower 230W Power Supply
- 15" Non-Interlaced Monitor
- 101 Keyboard

$2300

W/20" Monitor $3100

486/33MHz (Same Configuration) .. $2150

486/50 MHz VESA LOCAL BUS

- 8MB RAM
- 1.2 & 1.44 Floppy Drives
- 130MB Hard Drive
- Local Bus Video Card + Controller
- 2 Serial/1 Parallel/1 Game Port
- 14" Non-Interlaced Monitor
- Mid Tower Case
- 101 Keyboard

$1960

486/33MHz (Same Configuration) .. $1800

486/50/33 MHz • 386DX/40 MHz

- 4MB RAM
- 130MB Hard Drive
- 1.2 & 1.44 Floppy Drives
- 1MB SVGA Video Card
- 2 Serial/1 Parallel/1 Game Port
- Tower Case
- 14" SVGA Monitor
- 101 Keyboard

486/50/33MHz $1445/$1295

386DX/40MHz $999

THE UPGRADABLE

386DX/40MHz

(Upgradeable To 486/50MHz By Changing The CPU)

- 4MB RAM
- 130MB Hard Drive
- 1.2 & 1.44 Floppy Drives
- 1MB SVGA Video Card
- 14" SVGA Monitor
- Mini Tower
- 101 Keyboard
- 2 Serial/1 Parallel/1 Game Port

$1075

NOTEBOOK COMPUTERS

	486DX-33	486SLC-25	486DX2-50
80MB	$1895	$1494	$1995
100MB	$1995	$1595	$2095
200MB	$2195	$1795	$2295

386SXL-25, 2 MB RAM

80MB $1295
120MB 1395

486DX-33 COLOR

80MB $2495
120MB 2695
200MB 2895

ONE STOP SHOP FOR THE LATEST IN MULTIMEDIA

KODAK PHOTO CD (MULTI-SESSION) IS HERE!!

CD ROM DRIVES

NEW! SONY 31A, Internal 64KB Buffer, 490ms, No Caddy Needed MPC, PHOTO-CD, CD-I W/I/F Card, Cables & Drivers $295

Toshiba Dual Speed XM3301B w/SCSI 200ms Host Adapter & Cable $595

ONE SLOT MULTIMEDIA KITS

NEW! MULTIMEDIA KIT (One Slot True 16 Bit Sound Card) SONY 31A 64K Buffer Internal PLUS MEDIA VISION PROAUDIO SPECTRUM 16 Bit Cables And Drivers One Slot Solution!!! Photo-CD (Multi-Session), MPC & CD-I $395

NEW! MULTIMEDIA KIT (One Slot) SONY 31A 64K Buffer Internal PLUS Creative Labs Sound Blaster Pro Cables And Drivers One Slot Solution!!! Photo-CD (Multi-Session), MPC & CD-I Wing Commander And Ultima VI or Chessmaster 3000 MPC Games Included $395

NEW! MULTIMEDIA KIT (One Slot) Mitsumi LU-005S 32K Buffer Internal (350ms)ATI Sound Card Cables And Drivers One Slot Solution!!! Photo-CD (Multi-Session) $395

CD-TITLES AND SOUND CARDS

	MSRP	OUR PRICE
MPC/WIN* **		
Toolworks MultiMedia Encyclopedia		
Animals MultiMedia (San Diego Zoo)		
US Atlas V3.1 MultiMedia		
ChessMaster 3000 MultiMedia		
World Atlas V3.1 MultiMedia		
Mavis Beacon Teaches Typing V2.0 MultiMedia	$895.75	$149.95
DOS/MULTIMEDIA* **		
Toolworks MultiMedia Encyclopedia		
Toolworks Reference US Atlas V1.5 w/Automap		
Sherlock Holmes		
Game Pack II (10 Games)		
Animals MultiMedia (San Diego Zoo)	$775.30	$129
MPC ToolWorks Encyclopedia CICA Windows ShareWare		$95

INDIVIDUAL TITLES FOR BUNDLING

Kodak Photo-CD Access Software & Sampler	$49
MPC ToolWorks Encyclopedia	$89
MPC US Atlas, World Atlas, Mavis Beacon Teaches Typing and Chess Master 3000	$89
CICA Windows Shareware	$29
SHERLOCK Holmes	$49
Game Pack II (10 Games)	$49
Secret Weapons of Luftwafe	$39
Just Grandma and Me	$49

Ask For Other Bundles On CD-Titles
Other CD-ROMS Available At Our STORE,
Please Tell Us What you Need!
Available Only W/Purchase of CD-ROM Or MultiMedia Kit.

OKIDATA

OKIDATA OL400 ..... $568
• 4PPM, 17 Fonts, Includes Toner

OKIDATA OL810 ..... $1095
• 8 PPM, 300x1200 DPI, PCLS

OKIDATA OL840 ..... $1295
• Postscript, 8 PPM, Apple Talk

PRINTERS

LASER PRINTER MEMORY AVAILABLE CALL FOR LOWEST PRICE!

NEC

NEC Model 95
• Postscript Level II, PCL-5, RISC Processing
2MB RAM $1389

STAR PRINTERS

Star 2420, 24 Pin Color $269

HEWLETT PACKARD

HP IIP Plus $769
4PPM, 14 Fonts, 300 DPI

HP IIIP $919
1MB RAM, 14 B.M., 8 Scalable Fonts

HP 4 ..... $1359
2MB RAM, 600 DPI, 8 PPM

HP 4M $1929
6MB RAM, 600 DPI, Post-Script

HP IIID $2250
Duplex Printing, 2 Trays, 1MB RAM

HP III SI $3095
1MB RAM, 17 PPM, 2 Trays

DESKJET PRINTERS

HP 500 ..... $379
HP 500 Color $479
HP 550 Color $669

800 DPI

• **Laser Master WinJet 800 DPI** $695
• **Laser Master WinPrinter 800 DPI** $1395
• **1000/1200 DPI** ..... CALL

CALL FOR LOWEST PRICE!

SCANNERS

Logitech 256K w/OCR $299

FULL PAGE SCANNER

ArtiScan By Tamarack
600 DPI w/Photostyler & OCR $1158
800 DPI w/Photostyler & OCR 1384
1200 DPI w/Photostyler & OCR 1884
Microtek Color 600 DPI (Flatbed) $995
ProScan Feed Scanner (Color) 795
HP ScanJet IIC 1359

FLOPPY DRIVES • MODEMS
HARD DRIVES • TAPE BACK-UPS
VIDEO CARDS • CD ROM

HOME EDUCATION STATION

386DX/40MHz

- 2MB RAM
- 85MB Hard Drive
- 1.2 & 1.44 Floppy Drives
- CD ROM Drive
- SVGA Card
- SVGA Monitor
- 101 Keyboard
- Mini Tower

6 CD TITLES! (add $149)

$1195

BLUE CHIP AUTOMATION

HOURS: Mon.-Fri 9:30am-6:30pm
Sat. 10am-3:30pm

CALL TODAY!
(714) 995-5953

9193 VALLEY VIEW
CYPRESS, CA 90630
FAX: (714) 995-7090

DEALER INQUIRIES WELCOME
FINANCING AVAILABLE!
(Prices subject to change w/out notice)

All Prices reflect 5% cash discount.

VISA · AMERICAN EXPRESS · MasterCard

Freestanding Telework Centers

A Look At Three Types Of Existing Work Environments For Telecommuters

BY ROBERT MOSKOWITZ

With the rising interest in telework and an ever growing number of employees shifting to this electronic rather than physical style of "getting to work," it's only natural that the number of freestanding telework centers would increase.

A freestanding telework center is an office suite or office building dedicated to supporting workers who "telecommute" to their jobs. In most cases, a freestanding telework center is intended to be a public facility, available to anyone who wants to use it and who can pay the rates. But there can be private ones, and—of course—it's possible to use existing offices to which people now commute as telework centers for other workers who live nearby but who would ordinarily commute to an office across town. (More about this exciting concept in months to come.)

For now, let's consider three classes of telework centers, as follows:

Satellite Centers—These are generally freestanding telework centers built and operated by a single company for the exclusive use of its own employees. Several of these are currently operating in California, and dozens of large companies are considering this solution. But critics charge that a satellite center is essentially another central office, and doesn't really address the unique possibilities of telecommuting.

Executive Centers—These are generally freestanding telework centers built and operated for profit. The operator opens the telework center, and offers its facilities to anyone needing a workspace. Included in this category would be small, neighborhood telework centers as well as large, centrally located centers. Executive centers often find their largest markets among people who need a workspace without any special telework capabilities, but a significant percentage of those using executive centers happen to be telecommuters.

Shared Office Sites—These are conventional central offices that employers will make available on an "exchange program basis" for the part-time use of workers who live nearby. Shared office programs hold great potential for eliminating commuter trips and vehicle miles, but are only now gearing up for implementation among the first wave of interested city, county, regional, and state governments. Once in place, these programs will theoretically allow employees to work at the closest participating site rather than the one to which they would otherwise have to commute. Government is leading the charge in this direction at least partly because government regulations are the primary impetus to cut down on employment-related commuter trips and vehicle miles. Private firms may later join the movement toward sharing offices electronically, once the concept proves out in practice. Rather than discuss theoretical models, however, we'll delay our look at such programs as the Telework Facilities Exchange Program until they have booked some practical experience.

In an effort to reduce congestion as well as pollution, CalTrans is experimenting with smaller telework centers located within a half a mile or a mile of the people they are intended to serve.

SATELLITE CENTERS

Right now in California, there are very few company-owned satellite telework centers. Pacific Bell, a leader in telecommuting programs, has two satellite centers now fully operational: one in North Hollywood, and another in downtown San Francisco.

PacBell's satellite centers are simple offices based on the traditional layout of cubicles, desks, and chairs. But in addition to the expected file cabinets, bookcases, and telephones, each person's workspace contains a computer hooked to PacBell's own data networks.

With the satellite center electronically linked to the main office it serves, each teleworker at the satellite center has no trouble calling up the same information, sending and receiving the same computer (and telephone) messages, and using the same centralized word processing and other computer services as they would in their normal work locations.

EXECUTIVE CENTERS

One of the organizations best at operating executive centers is Office Technology Group, Inc. (OTG). The company either joint ventures with, or provides management services to, building owners who want to provide an executive center as a service to their tenants and as an additional source of rental revenue.

OTG presently manages five telecom muting centers in California, and is currently opening three others. According to Frank Cottle, executive vice president and co-founder of the company, "We have been doing this successfully for a number of years, and we're making money at it."

Present sites include the Greater Los Angeles World Trade Center, Downtown Plaza,

RESOURCES:

Office Technology Group, Inc.
(310)983-8000

Inland Empire Economic Partnership
Steve Pantel, Director
(714)947-7877

Bay Area Telecommuting Centers
(510)645-8624

Copyright © 1993 by Robert Moskowitz. All rights reserved. *Robert Moskowitz is a business consultant based in Woodland Hills, CA, who writes frequently on productivity, office automation, and technology.*

HIGH QUALITY DISK DRIVES - LOW PRICES - EXCELLENT SERVICE

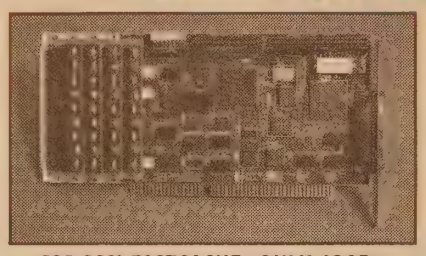
BRAND NEW DRIVES

NEW SCSI HARD DRIVES	Qty 1	Dealer*
Seagate ST1239N, 3.5", 207MB, 15 ms	$469	$449
Seagate ST41200N, FH, 1040MB, 15 ms	$1295	$1249
Micropolis 1578, FH, 338MB, 18 ms	$495	$449

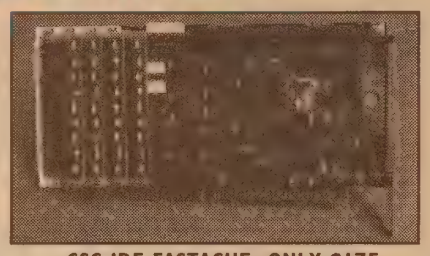
NEW ESDI HARD DRIVES	Qty 1	Dealer*
Toshiba MK358FA, FH, 660MB, 16 ms	$849	$795

NEW CSC IDE AND SCSI FASTCACHE CONTROLLERS	Qty 1	Dealer*
CSC Fastcache IDE, REV B, 2HD/4FD, 0K RAM installed No drivers are required for DOS or OS2 applications; cache to 64MB, supports 4 floppies including 2.88MB drives	$149	$119
CSC Fastcache-64 SCSI, 7HD/4FD, 1MB cache installed Supports up to 7 SCSI hard, tape and CD-ROM, cache expands to 64MB, supports 4 FD, incl. 2.88 MB drives	$249	$229

FULL FIVE YEAR WARRANTY
STANDARD ON ALL CSC CONTROLLERS!



CSC SCSI FASTCACHE ONLY $295



CSC IDE FASTACHE ONLY $175

NEW DISK CONTROLLERS	Qty 1	Dealer*
DTC 6282-24, 16 bit, ESDI, HD/FD, 24 MBit, 32K cache	$129	$125
DTC 3280AS, 16 bit, SCSI, ASPI, w/Novell, OS2, CD-ROM drivers	$149	$145
SDC800, economy 8 bit SCSI for DOS	$29	$25
WD1007AB, Western Digital, 16 bit ESDI, 2HD/2FD	$39	$35

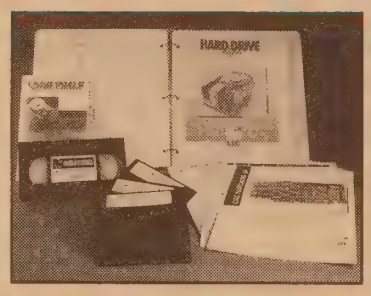
NEW DRIVES HAVE A ONE YEAR WARRANTY;
EXTENDED WARRANTIES ARE AVAILABLE

*** Dealer Pricing: Just order 2 or more identical units.**

NEW CD ROM DRIVES	Qty 1	Dealer*
NEC SCSI, External, Multimedia CD ROM, 1 year warranty	$295	$289
Tandy CD ROM Kit, cables, Adapter, Software	$195	$189

HARD DRIVE BIBLE 6th EDITION, WITH INSTALLATION VIDEO $39.95

The Hard Drive Bible is an encyclopedia of information on hard drives. It contains installation instructions, jumper settings, drive parameter tables, and setup information on hundreds of hard, optical, and tape drives. Also included are jumper settings and compatibility information on controller cards and driver software. Don't miss the benchmark chapter with performance and reliability test reports. This book and the included software are essential for all dealers and system integrators who install hard drives.



Our New Showroom Is Now Open at 730 N. North Pastoria Avenue in Sunnyvale

Visit our new retail showroom on Pastoria Ave. in Sunnyvale, just off Mathilda and Hwy. 101. All of the products advertised here are on display. We don't use "call" instead of listing a price. Everything is right up front. Skilled sales and support staff will advise you on your hard disk needs and problems. They'll be glad to make recommendations for hard drive upgrades for DOS, OS/2, Windows, Macintosh, Sun, and Novell applications.

Disclaimer: We are not responsible for typographic or composition errors in pricing or product information.

Maxoptix, Maxtor, Seagate, Toshiba, Tahiti I, Micropolis, DTC, WangDAT, Sun, OS/2, and Novell are registered trademarks of their respective companies.

QUALITY REFURBISHED DRIVES

QUALITY REFURBISHED ESDI HARD DRIVES	Qty 1	Dealer*
Maxtor 8610E, FH, 510MB, 16 ms, 1 year	$495	$475
Maxtor 8800E, FH, 660MB, 13 ms, 1 year	$749	$695
CSC 1.3E, FH, 1300MB, 13 ms, 1 year	$1095	$950

Special Package: Add only $100 to get complete kit hard drive, caching controller, and cables.

The CSC 1300Mb high performance drive kit offers rock-solid 13 ms ESDI performance that blows any IDE drive away! A fast 22 Mbit/sec interface and true 13 ms average seek coupled with a 20 head design make these ideal for network servers and workstations. Sold as preformatted kits with a new 24 Mbit/sec DTC cache controller. Quantities are limited so call soon to avoid disappointment!

QUALITY REFURBISHED SCSI HARD DRIVES	Qty 1	Dealer*
Maxtor LXT200S, 3.5", 201MB, 15 ms, 1 year	$349	$319
Maxtor LXT340SR, 3.5", 340MB, 15 ms, 1 year	$549	$525
"THE TANK" Maxtor 8760SR, FH, 660MB, 16.5 ms, 1 year	$895	$795
Maxtor P0-12S, FH, 1.2GB, 13 ms, 1 year	$1195	$1095
Maxtor P1-17S, FH, 1.7GB, 13 ms, 1 year	$1495	$1450

SPECIAL PACKAGE:
Add only $229 to above drives and get CSC's FastCache 64 with 1 MB RAM and all the cables.

QUALITY REFURBISHED TAPE DRIVES	Qty 1	Dealer*
WANG1300 WangDat SCSI Tape Drive, HH, 1.3GB, 4 mm	$895	$849
EXABYTE 8200 SCSI 2.2GB F/H 8 mm RFB, 1 year	$995	$895

QUALITY REFURBISHED IDE HARD DRIVES	Qty 1	Dealer*
Maxtor 2585A, 2.5", 85MB, 15 ms, ideal notebook drive	$209	$189
Maxtor LXT213A, 3.5", 213MB, 14 ms, 1 year	$369	$339

QUALITY REFURBISHED OPTICAL DRIVES	Qty 1	Dealer*
Maxtor RXT800S, HH, SCSI, 800MB, WORM	$495	$449
Maxtor RXT800HSR, FH, SCSI, 800MB, WORM	$395	$379
Maxoptix Tahiti I, SCSI optical drive, 1 GB, 35 ms, 90 day	$1295	$1195
Maxtor OC1000-1024, Erasable media, 1058MB, 1024 byte	$149	$99

The Maxoptix Tahiti I drive is a high performance erasable optical drive which uses 650MB ISO and 1 GB(!) Maxoptix cartridges. The removable cartridges are virtually indestructible and as fast as many hard drives! Need another gigabyte? Just pop in an inexpensive erasable disk! The cartridges are rugged, erasable, with an unlimited useful life. These drives are available as internal or as external units.

SPECIAL: CSC Tahiti Megatower - Complete external Tahiti-I drive, perfect for PC, MAC, or Sun applications.....$1495

640 MB Maxtor 8760S $595 to $895

1 GB Megatower $1495

CSC factory refurbished drives are available at competitively low prices, and are completely rebuilt, not just repaired. All drives are burned in, and tested using final test factory equipment. Every refurbished drive is backed by CSC's fast-turnaround 90 day or one year warranty, and extended warranties up to 5 years are available. All CSC refurbished drives meet or exceed manufacturer's new drive specifications. You won't find a better buy.

ORDERS AND INFORMATION:

Call for a free catalog and price list. Advice is always free! We gladly accept VISA or Mastercard orders in addition to COD and prepaid orders. There is never a surcharge for credit card orders. Call today for information. Honest formatted drive capacities are listed in this ad! Prices are subject to change without notice.

VISA

MasterCard

CORPORATE SYSTEMS CENTER
730 North Pastoria Avenue
Sunnyvale, California 94086
Phone: (408) 737-7312
FAX: (408) 737-1017

Call between 7:30 AM and 5:30 PM PST, M-F, for advice; and to check stock and place your order. Most orders are shipped within 48 hours. UPS and Federal Express surface, second day, and next day shipping are available. Economy truck shipping is available for large orders upon request. Fed-Ex Saturday delivery is available in most areas.

CSC111892 – Copyright © 1992, Corporate Systems Center

Visualize your local strip center or shopping center, but with a telework center right next to the video store.

and the Park Tower Building (all in Long Beach), The Tower (Westwood, Los Angeles), and HillTop office commercial development, (Richmond, East San Francisco Bay). These OTG executive centers are also connected by computer network with the Global Office Network, which electronically links 125 other locations in the USA, Canada, and Western Europe. But linkages need not stop there. Computer connections to any company's central offices can also be set up as needed via dial-up or dedicated lines.

OTG is presently negotiating to open additional centers in California. The company usually starts by signing a long-term operating agreement (similar to a hotel management agreement). It then designs and builds-out the space, installs the computers, phones, and other office equipment; hires the staff; and provides the day-to-day management. OTG's centers are unusual in that they utilize sophisticated computer capabilities and a broad range of office equipment to provide a comprehensive set of office services for everyone using their facilities. Some tenants use the center one day at a time, but many sign long-term leases and come in five days a week because the center is an inexpensive way to open a branch office or to provide a base of office support for a start-up venture.

OTG is also responsible for marketing these executive centers and signing up tenants. People come to OTG's executive centers as a result of their favorable reputation, but also because the company locates its centers in the midst of mixed business and residential densities, where many individuals and employers are looking for workspace with built-in office support. In Southern California, OTG is working with Commuter Computer to map transit patterns, and with the Air Quality Management District to have its centers certified as acceptable telecommuting centers for purposes of stringent trip reduction regulations. Although telecommuters used to make up only 5% of OTG's users, recently as many as 15–20% of the company's overall client base have fit traditional definitions of tele-commuting. Many nontraditional telecommuters use the centers in unusual ways; for example, OTG users may live down the street from the executive center and come in as needed to work electronically with clients located sixty to ninety minutes away by car.

MASTERS SOFTWARE CO

IBM

Apple

Color Classic 4/80	$1279
LC III 4/80	1229
IIvx 4/80	1609
Centris 610 4/80	1629
Centris 650 8/230	3049
Quadra 800 8/230	3699
Quadra 950 8/0	4300
LaserWriter 300	679
LaserWriter Pro 600	1699

PS/ValuePoint

325T 2/80	$950
425SX 8/80	1199
425SX 8/170	1399
433DX 8/120	1550
466DX2 8/212	2299

(*Above Include:* 1.44MB, SVGA, 2S, 1P, IBM Mouse, *30 Day Money Back Guarantee*, 1 Year On-Site Warranty, DOS or OS/2 2.0 Loaded)

6312 14" SVGA NI $375

Please call for the latest Apple prices introduced after press time. We will beat any advertised price, from ANYONE!

LOWEST PRICES GUARANTEED! WE WILL NOT BE UNDER-SOLD!

(714) 479-0999

Toshiba T1800 Bundle	1249
Canon BJ10EX	259
Seiko 1760LR .25mm	979
PPI 14.4 external modem	259
Supermac Spectrum 24	799
E-Machines MX 24bit	799

WE ARE THE MASTERS!

(Authorized Dealers for Apple, IBM, and all products we sell. These are just a sample of our outstanding prices. Call us for prices on other products not listed)

NOVELL®

C.N.E.

For a Higher Degree of Mastery

Experts agree, just as some degrees help you in business or science, your Novell CNE and ECNE degree increase your expertise as a networking specialist. That's why more and more companies are either hiring or training their own CNEs at Certified Network Educators.

CNE Quick Course

If you're already proficient with Novell, it's easier than ever to obtain your degree by registering for the CNE Quick Course. Produced by Novell's CNE program developer, the CNE Quick Course is offered only by Certified Network Educators, and allows CNE certification in just 5 days.

CNE/ECNE Certification is closer than you think.

Novell Authorized Education Center

Call 1-800-LAN-STUDY (800 -526-7883)

- **Woodland Hills**
- **San Francisco**

Certified Network Educators

Be sure to ask for a free CNE ASSESSMENT TEST DISK.

PC SERVICE

WHY BUY FROM US?

- We Service What We Sell
- We Support Our Customers
- We Won't Rest Till It's Right!

486-50 Windows Buster

- 486DX-50 MHz w/256K Cache
- 8MB RAM
- 1.2MB & 1.44MB Floppy Drive
- 210MB Hard Drive
- Diamond Speedstar 24x VGA 1 MB Card
- Super VGA 1024x768 Color Monitor Non-Interlaced
- 101 Keyboard
- Mini-Tower Case
- DOS 5.0, Windows, Serial Mouse

$2,039

386-40 Econo-Wise

- 386DX-40MHz w/64K Cache
- 4MB RAM
- 1.2MB & 1.44MB Floppy Drive
- 125MB Hard Drive
- Super VGA 1MB Card
- Super VGA 1024x768 Color Monitor .28
- 101 Keyboard
- Mini-Tower Case
- Serial Mouse

$1,149

Goodies Corner

Creative Labs CD-ROM Upgrade Kit
$599.95

Koss Speaker Set
$19.95

HP Laser Jet 4 Printer
$1399.95

PRICES AND AVAILABILITY SUBJECT TO CHANGE WITHOUT NOTICE.

NOVELL LANTASTIC DEALER

N
Topanga Canyon
Sherman Way
PC SERVICE

PC SERVICE
22017 Sherman Way
Canoga Park, CA 91303
FAX 818/887-1470
818/887-0040

BUSINESS SOLUTIONS

Another form of freestanding executive center follows a not-for-profit "public utility" model. The Inland Empire Economic Partnership has opened four such freestanding executive centers, one each in Apple Valley, Riverside, Ontario, and East Highland, CA. These centers provide basic computer and office services, are freely available to anyone who wants to use them, and are subsidized (at least temporarily) to promote usage and experimentation with telecommuting by employees and employers who otherwise might not try it.

At least one group has received both federal and state funding to develop two similarly structured executive centers for telework in the 580-680 corridor in the San Francisco Bay Area. Dale Pederson, project manager of Bay Area Telecommuting Centers, says the group is trying to locate its telework centers close to mass transit so people can use them without having to drive. At the present time, the board is still trying to decide on specific locations, and weighing bids to see who the corporate partners are going to be. Each center should accommodate twenty-five teleworkers, with room for another twelve to twenty in two conference rooms, one of which will have full video capabilities. Pederson estimates that the earliest date to get the first two planned centers operating would be the second quarter of 1993, and would like to see them operating no later than the third quarter.

Such executive centers can serve other purposes, too. For example, a telework center now opening its doors on the Paiute Indian Reservation in Bishop, CA, is providing economic development for that community.

The Bishop-Paiute Teleworks Center, located in Bishop on the Paiute Reservation, is initially supported by a federal grant. It recently opened in the form of a four-station telework center where training for local residents can begin. Over the next few months, center managers plan to add more capacity and commence regular business operations. The full-scale concept is to develop an industrial park anchored by the telework center, and is intended as a pilot program for economic development not only on other reservations, but also for inner cities and for underdeveloped foreign countries.

"A lot of health insurance companies are outsourcing their data entry to such locations as Manila and Ireland," says Rod Feather, one of the key movers of the Bishop-Paiute project. "But our primary focus is broader. We're also looking at inbound 800 number processing, order processing, outbound telemarketing, accounting services, and such sophisticated work as computer-aided mapping of utilities and other services to support development planning processes anywhere in the world."

(Feather says the Center is currently looking for matching funds to help expand its capacity. For details, contact him at Communications Management Associates, Walnut Creek, CA, 510/933-7595.)

A slightly different approach to executive centers is being taken by CalTrans. In an effort to reduce congestion as well as pollution, CalTrans is experimenting with residentially based executive centers, defined as smaller telework centers located within a half a mile or a mile of the people thry are intended to serve. These eliminate the centralized notion of most executive centers and satellite centers, in favor of broadly distributing many more, but smaller, centers much closer to where people live.

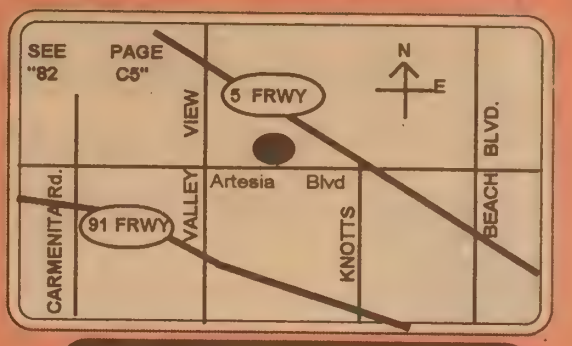
Visualize your local strip center or shopping center, but with a telework center right next to the video store. CalTrans hopes people will walk or bicycle to these neighborhood centers, entirely eliminating the use of auto mobiles from their daily going-to-work routines.

The agency is actively seeking sites for seven to twelve such centers to be opened over the next few months, and has contracted with UC Davis to manage them and study not only how people make use of the neighborhood telework centers, but what impact they have on pollution, commuter trips, energy usage, and so forth. "It's very clearly a research project," says Michael Seaman, CalTrans's chief of the Special Projects Branch within the Office of Traffic Improvement, who is running the project. "We think," says Seaman, "that, if the idea proves out, it's ideal for California, where virtually every dwelling is within walking or biking distance of some office or retail space that could be converted to a telework center. Although we don't envision running our centers indefinitely, entrepreneurs may find our research results quite interesting and may begin to operate for-profit centers along the lines we prove out in this study."■

K-NET, Inc.

Personal Computers & Local Area Network Specialists

14747 ARTESIA BLVD. #1F
LA MIRADA , CA 90638
TEL:(714)994-3443, FAX:(714)994-2619



K-NET 386SX 33 Mhz System

* 80386SX-33Mhz CPU
* **2 MB** Memory
* **42 MB** Hard Drive
* Deluxe Mini Tower Case
* **TEAC 1.2 or 1.44** MB Floppy Drive
* Floppy / Hard Disk Controller
* 2 Serial / 1 Parallel / 1 Games
* 1024x768 ***Super VGA monitor***,.39dp
* VGA card w/ 512K Memory
* 101 Enhanced Keyboard

Perfect for Beginner!!

$728

K-NET 386DX-40Mhz 128K Cache System

* AMD 386DX-40Mhz CPU
* **4MB** Memory Exp.32MB
* ***128K Cache*** Memory
* ***130MB*** Hard Drive
* **TEAC 1.2 & 1.44** MB Floppy Drive
* Deluxe Mini Tower or Desktop Case
* Super VGA Card w/ **1MB** RAM
* Super VGA Monitor ***.28 Dot Pitch,1024x768***
* Floppy / Hard DIsk Controller
* 2 Serial / 1 Parallel / 1 Games
* 101 Enhanced Keyboard

Best for Student!!

$998

K-NET 486DX-33Mhz Cache System

* **INTEL** 486DX-33Mhz CPU
* **4 MB** Memory Exp.32MB
* ***128K Cache Memory***
* ***170MB*** Hard Drive
* **TEAC 1.2 & 1.44** MB Floppy Drive
* Deluxe Mini Tower Case
* Super VGA Card w/ **1MB** RAM
* Super VGA Monitor,***.28 Dot Pitch,1024x768***
* Floppy / Hard Disk Controller
* 2 Serial / 1Par. /1Game Port
* 101 Enhanced Keyboard

$1298

K-NET 486DX-33Mhz 32 Bit VESA Local Bus

* **INTEL** 486DX-33Mhz CPU
* **4 MB** Memory Exp.32MB
* Built-in Math Coprocessor
* **256K** Cache Memory
* ***170 MB*** Hard Drive
* 101 Enhanced Keyboard
* Deluxe **Middle** Tower Case
* ***32 Bit Local Bus SVGA Card*** w/ 1MB
  (16.7Million True Color Display)
* ***Non-Interlaced*** SuperVGA Monitor ***.28dp***
* Floppy / Hard Disk Controller
* 2 Serial / 1 Parallel / 1 Games
* **TEAC 1.2 & 1.44** MB Floppy Drive

486DX-33Mhz.....$1448

K-NET 486DX-50Mhz 32 Bit VESA Local Bus

* **INTEL** 486DX-50Mhz CPU
* **4 MB** Memory Exp.32MB
* Built-in Math Coprocessor
* **256K** Cache Memory
* ***170 MB*** Hard Drive
* 101 Enhanced Keyboard
* Deluxe **Middle** Tower Case
* ***32 Bit Local Bus SVGA Card*** w/ 1MB
  (16.7Million True Color Display)
* ***Non-Interlaced*** SuperVGA Monitor ***.28dp***
* Floppy / Hard Disk Controller
* 2 Serial / 1 Parallel / 1 Games
* **TEAC 1.2 & 1.44** MB Floppy Drive

486DX-50Mhz.....$1598

K-NET 486DX2-66Mhz 32 Bit VESA Local Bus

* **INTEL** 486DX2-66Mhz CPU
* **4 MB** Memory Exp.32MB
* Built-in Math Coprocessor
* **256K** Cache Memory
* ***170 MB*** Hard Drive
* 101 Enhanced Keyboard
* Deluxe **Middle** Tower Case
* ***32 Bit Local Bus SVGA Card*** w/ 1MB
  (16.7Million True Color Display)
* ***Non-Interlaced*** SuperVGA Monitor ***.28dp***
* Floppy /. Hard Disk Controller
* 2 Serial / 1 Parallel / 1 Games
* **TEAC 1.2 & 1.44** MB Floppy Drive

486DX2-66Mhz.....$1748

Free Mouse
With System Purchase

VESA Standard Local Bus Available Now !!

Speed up your Hard Disk Performance w/ 32 Bit VESA Standard IDE Controllor Card for +$85
15" Flat screen VESA Non-Interlaced Super VGA Monitor 1280x1024, 70Hz, .28dp +$170
14" VESA standard, Non-Interlaced Super VGA monitor, 1280x1024, 70Hz, .28dp +$40

K-NET PRODUCT LINE

Network products:

8-bit ArcnetCard	$45.00
8-bit Ethernet Card	$78.00
16-bit Ethernet Card	$89.00
16-bit 10 Base-T Ethernet Card	$105.00
NetWare Lite v1.1 w/Dr. Dos6.0	$69.00
Lantastic A/I v.4.1	$69.00
BNC Terminator	$1.75
BNC Connector	$1.50

Printers:

HP DeskJet 500/500c/550c	$Call for
HP LaserJet IIP+/IIIP	$ Best
HP LaserJet 4	$ Price
EPSON, Panasonic, OKIDATA, and more selection for dot matrix printers	!!

(Cash price for all of the advertised HP printers)

Misc.:

DOS 5.0	$39.00
Windows 3.1	$39.00
***96/96/24 FAX Modem** (w/ Windows Software)*	***$69.00***
2400 Internal Modem	$35.00
MultiMedia CD-ROM Bundle (CD-ROM Drive, Sound Blaster Pro Card, Free Speakers, 4 CD title)	$525.00

Motherboard: (OK, with CPU)

486DX2-66MHz ISA (w/ 256K Cache & Local Bus slot)	$780
486DX-50MHz ISA (w/ 256K Cache & Local Bus slot)	$730
486DX2-50MHz ISA (w/ 256K Cache & Local Bus slot)	$580
486DX-33MHz ISA (w/ 256K Cache & Local Bus slot)	$500
486DLC-25MHz ISA (w/CPU & Math Co-processor)	$395
386DX/40Mhz (w/128K Cache)	$185
386SX/40MHz	$129

Monitor: SHAMROCK

15" FLAT SCREEN,Non-Interlaced SVGA Monitor *(1280x1024, .28dp, VESA 70Hz, Front panel adjustable Switch)*	$455
14" VESA Standard, Non-Interlaced SVGA Monitor *(1280x1024, .28dp, VESA 70Hz, Front panel adjustable Switch)*	$325
14" Non-Interlaced Super VGA Monitor *(1024x768, .28 Dot Pitch, Front panel adjustable Switch)*	$285
14" Interlaced Super VGA Monitor *(1024x768, .28 Dot Pitch, Front panel adjustable Switch)*	$255

SYSTEM UPGRADE

170 to 213 MB Hard Disk	+$95
1MB RAM (SIMM)	+$35
Non-Interlaced Monitor	+$35
Fujitsu 4700 keyboard	+$28
Focus keyboard w/Dust Cover	+$22
Colorado 120MB Tape Backup	+$195
Colorado 250MB Tape Backup	+$245

Financing Available!

"Make Easy Payments for your purchases"
Credit Approval In Minutes

**Please call for price and configuration not listed
**Ask about our NOVELL networking products & services
**All systems carry 1 year parts & labor limited warranty
**Price subject to change without notice
**15-day money back guarantee w/15% restocking fee on resaleable condition

Business Hours:
M - F 10 - 6
Sat. 11 - 3

All advertised price reflect 2% cash discount

Pollution And The Types Of Telecommuting

One much-debated question is where to locate the freestanding telework centers, and whether an employee's trip to such a center counts as one of that employer's total number of commuter trips to work. This is a critical issue because one of the strongest motivations for a company to support telework is to help it meet pollution reduction requirements now taking effect in metropolitan areas. Actually, quite a fierce battle is raging over the finer points of when a telecommute is—or is not—a valid way to reduce air pollution.

The main controversy involves whether or not a "cold start" is as bad as driving all the way to work. To understand this, visualize the typical employee. He or she wakes up, dresses, and leaves for work. If he or she starts the engine of a car, that engine emits a significant portion of its daily pollution in just the first few minutes. But if he or she walks, bikes, or takes mass transit to work, that "cold start" is eliminated, and so is the pollution it generates.

Some people argue that starting your car for a drive to a freestanding telework center is nearly as polluting as driving all the way to work. They favor regulations that include people driving to telework centers in their employers' total number of commuter trips to work. Others argue that a cold start may be a source of pollution, but that total pollution certainly diminishes when the worker drives to a nearby telework center rather than all the way to a distant office, and so does overall rush-hour traffic with all its associated problems. They argue that driving to a nearby freestanding telework center is much preferable to driving across town to the company's central office, and so should not be counted as part of an employer's total number of commuter trips. So far, everyone using a freestanding telework center is getting credit for not driving to work, but this can change at any time.

In Southern California, the South Coast Air Quality Management District has promulgated Regulation 15, which requires that employers with more than one hundred employees within the South Coast Air Basin must reduce trips by implementing plans for bus riding, van pool, car pool, walk, bicycle, or telecommuting. It's a victory that telecommuting was included, but under the rule's present wording this is considered a valid method only on an exceptional basis.

In Northern California, the Bay Area Air Quality Management District has just updated its employer trip reduction regulation (Regulation 13, Rule 1, Trip Reduction Requirement for Large Employers). It now includes telecommuting as one of its thirty-five suggested methods for reducing the number of cars going to an employer's location, and even lists groups that can help an employer find ways to implement a telecommuting program. Regulation 13 thus provides people who'd personally like to begin telecommuting with a means of waking up their employer. It also allows any employer to count every teleworker as a person "at work" every day, not just on an exception basis.

NOW THEY'LL RUN ON YOUR DESKTOP.

Californians can now take full control of their finances with Wells Fargo ON-LINE. With direct access to the bank from your Macintosh® or IBM® compatible PC, it's like opening a 24-hour Wells Fargo office right in your house.

Tap Directly Into Your Accounts

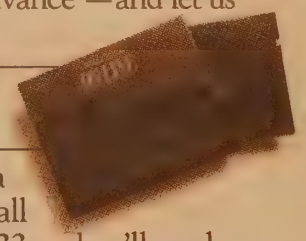
Review the last forty days of activity for each of your Wells Fargo accounts. Confirm that a check has cleared. Verify your deposits.

With Wells Fargo ON-LINE, you can access your accounts around the clock—and download information to spreadsheet or money management programs.

Pay Your Bills Online

Wells Fargo ON-LINE saves you time and postage with virtually unlimited bill paying. You can schedule recurring payments like a car loan or mortgage up to a year in advance —and let us worry about the details.

Call For A Demo Diskette Today



Give the stagecoach a test drive for just $3.95. Call **1-800-PC-WELLS, ext. 333** and we'll send you a demo diskette that takes you through all the features of Wells Fargo ON-LINE.

Sign up for Wells Fargo home banking and we'll apply the cost of the diskette to your ON-LINE start-up kit. We'll also waive the fee for your first month of ON-LINE service.

Call for a diskette today. And discover the control you get when you boot up your bank.

WELLS FARGO BANK

©1992, WFB, N.A. Member FDIC

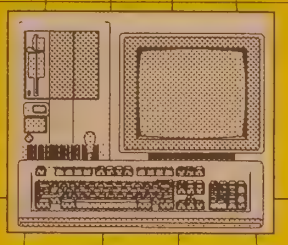
Start-up kit: $8.95. Service fee: $12.95/Month (First month free with offer). IBM is a registered trademark of IBM Corporation. Macintosh is a registered trademark of Apple Computer, Inc.

FREE MICROSOFT WINDOWS 3.10

And Hi Res. Mouse

With Purchase Of Any Completed System

LOWEST PRICES



386SX-25 MHz

- Mini tower case, 200 Watt power supply.
- 386SX-25 MHz, clock, calendar, batt.
- 387 Co-processor socket
- 1.2 and 1.44 FDD
- **80 MB IDE** 18 ms HD drive w/controller
- 2-serials, 1-parallel & 1-game ports.
- 101-key enhanced keyboard.
- **2 MB** memory, exp. to 8 MB.
- SVGA 1024x768 1MB.
- SVGA 1024x768 14" .39 dot monitor

$955.00

386DX-40 MHz

- Mini tower case, 200 Watt power supply.
- 386DX-40 , **64 K cache**, clock, cal., batt.
- 387 Co-processor socket
- 1.2 and 1.44 FDD
- **120 MB IDE** 18 ms HD drive w/controller
- 2-serials, 1-parallel & 1-game ports.
- 101-key enhanced keyboard.
- **4 MB** memory, exp. to 32 MB.
- SVGA 1024x768 1MB.
- SVGA 1024x768 14" .28 dot monitor

$1190.00

486SX-25 MHz

- Mini-size tower case, 230 Watt P.S.
- Intel 486SX-25 MHz, clock, cal., batt.
- 1.2 and 1.44 FDD.
- **170 MB IDE** 15 ms HD drive w/controller
- 2-serials, 1-parallel & 1-game ports.
- 101-key enhanced keyboard.
- **4 MB RAM** 70 ns, exp. to 32 MB.
- SVGA 1024x768 14" .28 dot monitor
- SVGA 1024x768 1MB.

$1295.00

486DX-33 MHz

- Mini tower case, 230 Watt P.S.
- Intel 486DX-33 MHz, clock, cal., batt.
- **256 K Cache** / Math Co-processor incl.
- 1.2 and 1.44 FDD.
- **170 MB IDE** 15 ms HD drive w/controller
- 2-serials, 1-parallel & 1-game ports.
- 101-key enhanced keyboard.
- **4 MB RAM** 70 ns, exp. to 32 MB.
- SVGA 1024x768 14" .28 dot monitor Non-Interlaced.
- SVGA 1024x768 1MB.

$1495.00

486DX-50 MHz

- Mini tower case, 230 Watt P.S.
- Intel 486DX-50 MHz, clock, cal., batt.
- **256 K Cache** / Math Co-processor incl.
- 1.2 and 1.44 FDD.
- **170 MB IDE** 15 ms HD drive w/controller
- 2-serials, 1-parallel & 1-game ports.
- 101-key enhanced keyboard.
- **4 MB RAM** 70 ns, exp. to 32 MB.
- SVGA 1024x768 14" .28 dot monitor Non-Interlaced.
- SVGA 1024x768 1MB.

$1695.00

486DX-33 MHz SFAST Local Bus 32B SVGA

- Mini tower case, 230 Watt P.S.
- Intel 486DX-33 MHz, clock, cal., batt.
- **256 K Cache** / Math Co-processor incl.
- 1.2 and 1.44 FDD.
- **170 MB IDE** 15 ms HD drive w/controller
- 2-serials, 1-parallel & 1-game ports.
- 101-key enhanced keyboard.
- **4 MB RAM** 70 ns, exp. to 32 MB.
- SVGA 1024x768 14" .28 dot monitor N.I
- **32 Bit Local SVGA** 1MB Win-Accelerator.

$1575.00

486DX-50 MHz SFAST Local Bus 32B SVGA

- Mini tower case, 230 Watt P.S.
- Intel 486DX-50 MHz, clock, cal., batt.
- **256 K Cache** / Math Co-processor incl.
- 1.2 and 1.44 FDD.
- **170 MB IDE** 15 ms HD drive w/controller
- 2-serials, 1-parallel & 1-game ports.
- 101-key enhanced keyboard.
- **4 MB RAM** 70 ns, exp. to 32 MB.
- SVGA 1024x768 14" .28 dot monitor N.I
- **32 Bit Local SVGA** 1MB Win-Accelerator.

$1775.00

486DX-66 MHz SFAST Local Bus 32B SVGA

- Mini tower case, 230 Watt P.S.
- Intel 486DX-66 MHz, clock, cal., batt.
- **256 K Cache** / Math Co-processor incl.
- 1.2 and 1.44 FDD.
- **170 MB IDE** 15 ms HD drive w/controller
- 2-serials, 1-parallel & 1-game ports.
- 101-key enhanced keyboard.
- **4 MB RAM** 70 ns, exp. to 32 MB.
- SVGA 1024x768 14" .28 dot monitor N.I
- **32 Bit Local SVGA** Win-Accelerator.

$1875.00

DEALERS AND CONSULTANTS ARE WELCOME

WARRANTY: 1 YEAR PARTS & 2 YEARS LABOR

OPTIONS

• 170 MB HARD DRIVE	Add	$80.00
• 210 MB HARD DRIVE	Add	$170.00
• MEMORY 1 MB	Add	$35.00
• 2400B MODEM	Add	$39.00
• 9600B FAX / 2400B MODEM	Add	$79.00
• 120 MB TAPE DRIVE	Add	$200.00
• SONY CD ROM w/CARD	Add	$395.00
• MULTI MEDIA w/SOUNDBLASTER	Add	$575.00
• PRINTERS, MISC.	Please Call	

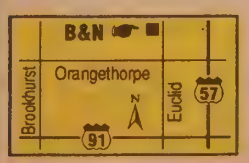
Please call for any customized configurations at lowest price.

Financing Available

We accept VISA MasterCard

B&N Computer

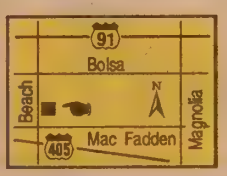
707 South Euclid ❑ Fullerton, CA 92632



Tel:
(714) 871-5038
Fax:
(714) 871-6413

MICROSEL Peripheral

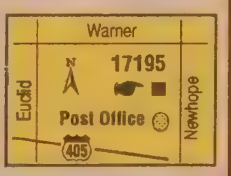
15368 Beach Blvd.
Westminster, CA 92683



Tel:
(714) 892-5020
Fax:
(714) 892-7901

CD Group

17195 Newhope St., #109 ❑ Fountain Valley, CA 92708



Tel:
(714) 434-6900
Fax:
(714) 434-9116

EZ COMPUTER

BLOW-OUT SPECIALS!

CHECK OUT OUR PRINTER PRICES!

486DX-33 w/256K CACHE $1190/$1214

486SX-25 w/256K CACHE $1020/$1040

SYSTEMS INCLUDE:

- 4MB RAM Installed
- 124MB Maxtor Hard Disk Drive
- 1.2 Or 1.44MB Floppy Drive
- Dual F/H IDE Controller
- 101 Enhanced Keyboard
- Desktop Or Mini-Tower Case
- UL Power Supply
- SVGA Graphic Card
- 14" SVGA Monitor
- 1 Year Parts Warranty
- 5 Year Labor Warranty
- 48 Hour Turnaround Time On Repair & Service

386DX-40 w/128K CACHE $895/$913

386SX-33 $830/$846

FINANCING AVAILABLE (on approved credit)

BUSINESS HOURS Mon. - Fri. 9am - 7pm Sat. 9am - 5pm

486DX-50 w/256K CACHE $770/$785

486DX-33 w/256K CACHE VESA LOCAL BUS $600/$612

486DX-33 w/256K CACHE $575/$587

486SX-25 w/256K CACHE $410/$419

386DX-40 $315/$322

486DX2-66 $850/$867

386SX-33 $250/$255

SYSTEMS INCLUDE:

- Mini Tower
- 220W Power Supply
- 1MB RAM Installed
- 1.2 Or 1.44 Floppy Drive
- Dual FDD & HDD Controller
- 2 Serial/1 Parallel/1 Game Port
- Real Time And Clock
- 101 Enhanced Click Keyboard
- 1 Year Parts Warranty
- 1 Year Labor Warranty
- 48 Hour Turnaround Time On Repair & Service

NOTEBOOK SPECIAL!

486DX2-50
(4MB) 210MB HD
$2230/$2275

486DX-33 COLOR
(4MB) 240MB HD
$2850/$2910

386DX-33
(4MB) 80MB HD
$1450/$1480

INCLUDES

- Carrying Bag & Numeric Keypad
- LCD VGA w/32 Gray Scale
- 1.44 Floppy Disk Drive
- Keyboard w/Keypad Connector
- 2 Serial/1 Parallel/ 1 Game Port & AT Bus I/O Adapter
- Docking Station Connector
- 3 Hour Battery Life
- AC/DC Adapter

CONSULTING

Networking - PC's
Computer Applications

PRINTERS

Action Printer 2250	$145
Action Printer 3250	$190
LQ 570	$240
LQ 1070	$365
Action Laser 1000	$650
Action Laser 1500	$820
EPL 8000	$1100

BUSINESS SOFTWARE FOR:

- SBT Accounting
- Retail Stores
- Video Stores
- Liquor Stores
- Auto Repair
- Salons
- Accountants
- Attorneys
- Restaurants
- Dry Cleaners
- Service Businesses
- ...And Your Business!

COMPUTER EDUCATION

Classes Taught In English, Spanish & Korean

- Introductory & Advanced Classes
- Individual & Group Tutoring
- **Computer Skills -**
  - Word Processing,
  - Computer Language
  - Computer Repair
  - Database
  - Accounting Programs
  - MS-DOS
  - Spread Sheet (Lotus 1-2-3)

CALL FOR OTHER APPLICATION SOFTWARE PACKAGES!

MONITOR

14" VGA Color, .42	$190
14" Multiscan VGA, .39	$220
14" SVGA, .28	$250
14" Non-Interlaced SVGA, .28	$285
14" Sony 1034S, .25	$580

GRAPHIC CARD

256K VGA Card	$26
512K SVGA Card	$37
1MB SVGA Card	$54
Oak VESA w/1MB & Window Accelerator	$75
TSENG ET 4000 w/1MB	$95
Acumos w/1MB & Window Accelerator	$85

MEMORY & FLOPPY

1MB RAM To 2MB	$40
1MB RAM To 4MB	$99
1MB RAM SIM	$33
256K RAM SIM	$11
1.2/1.44FDD	$50/50
TEAC	$50/50
Epson	$40/40

HARD DISK

40MB	$125
80MB	$185
105MB	$210
130MB	$230
170MB	$255
210MB	$340

SPECIALS!

Mouse	$9
Mouse w/Pad & Holder	$15
Trackball	$29
16 Bit Ethernet Card	$65
Windows	$40
DOS 5.0	$40
120MB Tape Backup(Colorado)	$190
250MB Tape Backup (Colorado/Mountain)	$235
2400 Internal Modem	$30
9600/2400 Fax/Modem	$75
CD ROM w/Sound Blaster Pro Speaker - 4 Midi's	$500

GOVERNMENT & CORPORATE ACCOUNTS WELCOME

EZ COMPUTER

TEL: (714) 447-3955

MasterCard VISA

2021 W. COMMONWEALTH AVE., SUITE F • FULLERTON, CA 92633

(Prices subject to change w/out notice.)

Accounting Systems For Small Retailers

Taking Advantage Of Tax And Accounting Rules For Operations Grossing Under $10 Million

BY DAVID A. SIMON, CPA AND JENNIFER ROBIN CHERNISS

Resellers—be they retailers, wholesalers or distributors—confront a variety of tax and accounting problems as they manage their inventories. This article focuses on accounting issues as they effect small size retailers: defined as those with gross sales under $10 million per year. These are the businesses too small to be covered under the uniform capitalization rules which the IRS requires very large companies to follow.

Operators of smaller retail establishments need to understand the nature of accounting and tax issues effecting them so that they can take advantage of tax planning opportunities and assure that their computerized accounting system provides adequate information for managerial and tax purposes.

In general, tax laws require that the costs of inventory—property which is held primarily for resale in the ordinary course of business—must be capitalized. The costs related to those inventories are not deductible when incurred. Rather, they are carried on the books and may only be deducted in the year in which the inventory is sold or disposed of.

Retailers must determine which of several inventory treatments apply to their operation, then select or design the computerized accounting system to track costs and generate the necessary reports. There may be multiple tax treatments available for these methods, and the retailer needs to make a timely election with the IRS as to which is opted for. Methods of inventory accounting include the LIFO [Last In, First Out] retail method, the simplified dollar-value LIFO method, simplified resale methods, and specific identification.

Different accounting software packages offer a range of choices of inventory accounting methods. In the low end, the simplest packages offer only a single method, straight FIFO [First In, First Out], so that, if a different method were desired, the user would be required to make any adjustments manually. The more sophisticated programs accommodate a variety of methods, letting the user choose. The software computes the value of ending inventory according to that method, greatly reducing the manual adjustments later required. Before selecting software for your company, you'll need to know the method you want, then determine whether the package you're considering is compatible.

Copyright © 1993 by David Simon. All rights reserved.
David Simon, CPA (M.S., Taxation), is in tax and accounting practice in Oakland. His clients include a variety of professionals and businesses. He can be reached at (510)893-5753. Jennifer Robin Cherniss is a free-lance writer based in Berkeley.

NON-INVENTORY ACCOUNTING—AVOIDING THE ACCRUAL WORLD

Many small retailers may simplify their non-inventory accounting under the rules that apply specifically to them. In the simplest cases, it may be permissible to report income and expenses on a cash basis, generally avoiding the need for more complex accrual basis accounting.

Although it's necessary to capitalize inventories, not everything else need be accounted on the accrual method in all cases. This is especially true if the business is one in which inventories are comparatively small, with little change from year to year, and only a small proportion of business is conducted on credit. In such cases, it is proper to keep books and prepare tax returns almost entirely on a cash basis, making adjustment only for the variation in opening and closing inventory.

Avoiding the need for accrual basis books may permit the option of a very low-end accounting software package, costing perhaps under $250.

Some "Mom and Pop" size retailers have mistakenly opted for "big" accounting software. But the way to save time, aggravation, and expense on accounting products is by analyzing and understanding your needs *before* going shopping.

SIMPLIFIED DOLLAR-VALUE LIFO

Another way that your company can get by with relatively low-end accounting software is if you elect to use the simplified dollar-value LIFO method of inventory accounting, described below.

Only small businesses can use simplified LIFO. To be eligible, annual gross receipts for the three preceding taxable years must be under $5 million. This gross income test must be monitored every year, and you must switch to another method of accounting if income grows too high.

Under the broader LIFO method of inventory costing, inventory is valued at cost regardless of market value. The effect of LIFO is that, during periods of inflation, taxpayers can write off the most expensive units of inventory first, accelerating tax deductions and thereby lowering taxable income in that year.

However, due to troublesome record keeping requirements and complex calculations, many smaller businesses, for many years, did not adopt this favorable accounting method. The 1986 Tax Reform Act made LIFO more practical for small business with the simplified dollar-value LIFO method.

Under this method, inventory items are assigned to pools in accordance with major categories of governmental price indexes. Annual fluctuations in the value of these pools is measured by changes in these indexes. Employing indexes to arrive at inventory fluctuations avoids complexities inherent in computing the LIFO value of ending inventory.

Even entry-level software can assist a small business with year-end tax planning.

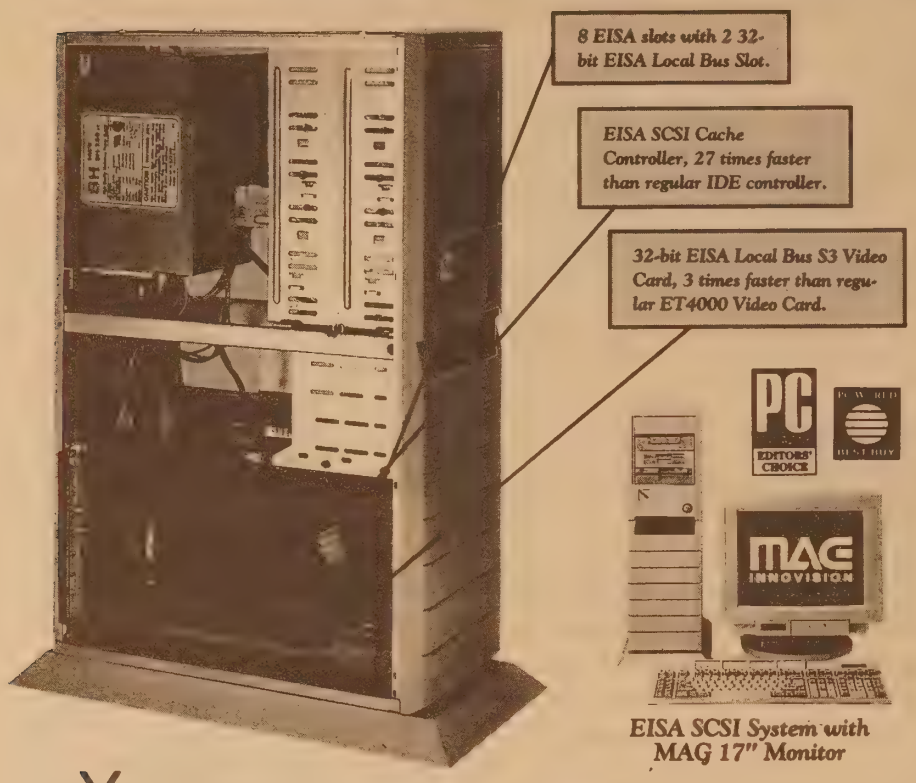
Some small businesses squander time and resources searching for an "ideal" accounting package which would allocate every inventory cost, when in fact their business qualifies for, and would be best served by, simplified LIFO. They'd do quite well without the overhead of unnecessarily complex accounting software, and the staff required to operate it. Some of the new Windows accounting packages have more than sufficient inventory capabilities for small businesses and great graphics as well.

Basic accounting software offering only the standard inventory capabilities, such as tracking inventory levels and direct costs, is generally sufficient in such cases. Your accountant can make "fine-tuning" adjustments for tax purposes near year-end.

continued on page 144

You Don't Really Know 32-Bit Systems Until

"We build EISA systems with SCSI controller or Local Bus window accelerator to meet today & tomorrow high speed & storage intensive applications"


8 EISA slots with 2 32-bit EISA Local Bus Slot.
EISA SCSI Cache Controller, 27 times faster than regular IDE controller.
32-bit EISA Local Bus S3 Video Card, 3 times faster than regular ET4000 Video Card.
PC EDITORS' CHOICE
BEST BUY
MAG INNOVISION

EISA SCSI System with MAG 17" Monitor

You may know about the power of EISA, SCSI, and Local Bus. But, if you are looking for the fastest computer, satisfy yourself with the newest break-through's: introducing Kanix's EISA-SCSI and Kanix's EISA-Local Bus technologies.

From the base **Kanix 486DX EISA system**, you have the option to get the fastest hard disc and/or video performance available.

The **Kanix EISA-SCSI** option gives you a hard drive subsystem that is 2700% faster than regular IDE's! We've achieved this through the integration of EISA, SCSI, and disc caching.

The **Kanix EISA-Local Bus video** technology is 30% faster than the fastest EISA S3 and 200% faster than an ET-4000! These figures reflect the value of Kanix's design in integrating a Local Bus S3 Windows Accelerator onto an EISA platform.

Kanix's local bus ISA and EISA systems are designed to meet your particular needs: 486 overdrive, multi-media, video, cache, memory, and hard drive upgrades are all available.

EISA SCSI

486DX-33/50

$3435/$3877

- 486-33/50MHz Processor with 8 EISA Slots
- 8MB RAM, 256K On-Board Cache Memory(exp. to 32 MB)
- 200MB SCSI Hard Drive, 15 ms
- Teac 1.2 & 1.44 MB Floppy Drives
- EISA SCSI Cache Controller
- EISA S3 Window Accelerator w/1MB VRAM
- Award Winning Flat Screen 17" Monitor
- 2 Serial, 1 Parallel and 1 Game Ports
- Focus 5001 Keyboard w/Calculator
- Windows 3.1, DOS 5.0 and High-Res. Mouse
- Full/Middle Tower w/250W Power Supply

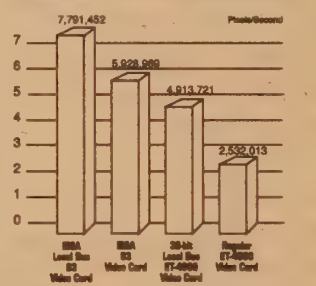
EISA Local Bus

486DX-33/50

$3249/$3540

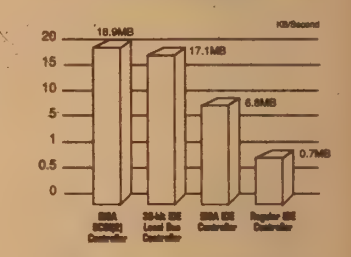
- 486-33/50MHz Processor with 2 32-Bit EISA Local Bus Slots
- 8MB RAM, 256K On-Board Cache Memory(exp. to 32 MB)
- 200MB IDE Hard Drive
- Teac 1.2 & 1.44 MB Floppy Drives
- IDE w/2MB Cache Controller
- 32-Bit EISA, Local Bus S3 Windows Accelerator w/1MB VRAM
- Award Winning Flat-Screen 17" Monitor
- 2 Serial, 1 Parallel and 1 Game Ports
- Focus 5001 Keyboard w/Calculator
- Windows 3.1, DOS 5.0 and High-Res. Mouse
- Full/Middle Tower w/250W Power Supply

VIDEO PERFORMANCE



(KANIX EISA Local Bus, 3 times faster than ET-4000 Video Card)

HARD DISK CONTROLLER PERFORMANCE



(KANIX EISA SCSI Controller, 27 times faster than regular IDE Controller)

Call for Options:

- Multi-media upgrade kit
- Colorado 120MB/250MB back up tape drive
- Fax/Modem Card upgrade
- SCSI 340MB upgrade
- IDE 340MB upgrade

Local Bus Base System & System Upgrade

486DX-33 **$1699**

486DX-50 **$1859**

VESA Standard

- 486-33/50MHz Processor with 32-Bit Local Bus Slot
- 4MB RAM, 64K Cache Memory
- 200MB IDE Hard Drive
- Teac 1.2 & 1.44 MB Floppy Drives
- Super VGA Adapter w/1MB
- Non-Interlaced 14" SVGA .28mm Monitor
- 2 Serial, 1 Parallel and 1 Game Ports
- 101-Key Click Keyboard
- Windows 3.1, DOS 5.0 and Mouse
- Full/Middle Tower w/250W Power Supply

Upgrade:

- Award Winning Flat Screen 17" Monitor: .....add $935
- 32-bit ET-4000 Local Bus, 32K color: .....add $65
- 32-bit S3 Window Accelerator: .....add $165

EISA Base System & System Upgrade

486DX-33 **$1950**

486DX-50 **$2130**

- 4MB RAM, 256K Cache Memory
- 200MB IDE Hard Drive
- Teac 1.2 & 1.44 MB Floppy Drives
- Super VGA Adapter w/1MB
- Non-Interlaced 14" SVGA .28mm Monitor
- 2 Serial, 1 Parallel and 1 Game Ports
- 101-Key Click Keyboard
- Windows 3.1, DOS 5.0 and Mouse
- Full/Middle Tower w/250W Power Supply

Upgrade:

- EISA SCSI Controller w/340MB SCSI Hard Drive: .....add $750
- EISA Local Bus S3 Window Accelerator w/17" Monitor: .....add $960

You've Talked To The Engineers At LOGISYS.

"We group into 3 different computer systems for your business solution:
Consultant, Expert & Essential"

(Consultant System *Choice Middle Tower or Full Tower with CTX Monitor)*

Consultant System
(Aimed at people who do professional jobs)

486DX-33/50	486DX2-50/SX-25
$1539/$1715	**$1655/$1187**

- 4MB RAM, Expandable To 32MB
- 64K On-Board Cache Memory
- 120MB 15ms Hard Drive
- Teac 1.2 & 1.44 MB Floppy Drives
- 1 Parallel, 2 Serial & 1 Game Port
- Super VGA Adapter w/1MB
- 1024 x 768, .28mm SVGA 14" Monitor
- 2 Serial, 1 Parallel and 1 Game Ports
- 101-Key Click Keyboard
- Windows 3.1, DOS 5.0 and Serial Mouse
- Middle/Full Tower w/250W Power Supply

Upgrade:

8MB RAM .....add $130
256K Cache .....add $40
200MBHD .....add $170
340MBHD .....add $500
Non-interlace Monitor.....add $30
NEC CD ROM 680MB....add $390
Fax, Modem Card ..... add $80
Colorado 120MB
Backup Tape .....add $210

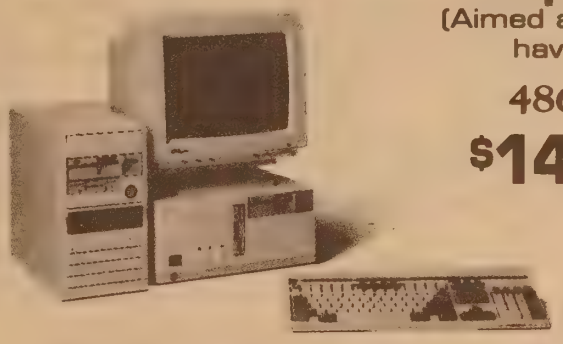
Call for Printer, Scanner, OverDrive Price

The three business systems offered by Kanix are products of our engineering commitment: to design total solutions, optimizing CPU, disk, and video performances for your particular needs. Experience Kanix system ownership! You will be surprised by nothing but the right features and expert service.

The 386SX based **Essential System** is the economical solution satisfying all basic small business needs. 2MB RAM is standard to support Windows 3.1 and a 80MB drive adequately stores Windows, word processing, and spread sheet programs.

The **Expert System** is for the experienced user demanding faster speeds offered by a 386DX/486SX and needing up to 100MB of disk space. 4MB of DRAM is configured for faster spread sheet operations and graphic functions not possible with smaller memory.

The **Consultant System** is for the professional designing on the computer. A 486 CPU, 4MB DRAM and a 120MB drive provide immediate power and storage. Upgradability is offered through 486 Overdrive support, 32MB DRAM expandability, drive option of 340MB and multimedia ready bays to accomodate CD-ROMs.



Expert System
(Aimed at buyers who already have purchased PC)

486DX-33/SX-25
$1480/$1159

386DX-40/33
$1120

(Expert System *Choice Mini Tower or Desktop Case with CTX Monitor)*

- 4MB RAM, Expandable To 32MB
- 64K Cache, Expandable To 256K
- 100MB 15ms Hard Drive
- Teac 1.2 & 1.44 MB Floppy Drives
- Super VGA Adapter w/1MB
- 1024 x 768, .28mm SVGA 14" Monitor
- 2 Serial, 1 Parallel and 1 Game Ports
- 101-Key Click Keyboard
- Windows 3.1, DOS 5.0 and Serial Mouse
- Mini or Desktop Case

Essential System
(Aimed at small business or entry level users)

386 SX-25/33
$925/$939

(Essential System *Choice Mini Tower or Desktop Case with CTX Monitor)*

- Intel 386SX-25/33MHz Processor
- 2MB RAM, Expandable To 16MB
- 80MB Hard Drive
- Teac 1.2 & 1.44 MB Floppy Drives
- Shadow RAM & Page Interleave Modes
- Super VGA Adapter w/1MB
- 1024 x 768, .28mm Super VGA 14" Monitor
- 2 Serial, 1 Parallel and 1 Game Ports
- 101-Key Click Keyboard
- Windows 3.1, DOS 5.0 and Serial Mouse
- Desktop Or Mini Tower Case

Order 714-693-1888

LOGISYS

KANIX, Inc. since 1987
4749 East Wesley Dr., Anaheim, CA 92806
Telephone: (714) 693-1888
Fax: (714) 693-1188

Business Hours: Mon-Fri 7AM to 6PM, Sat. 10AM to 3PM (PST)

Order Information
- Fax Order 714-693-1188
- International Order 714-693-1888
- APO/FPO Orders Welcome
- Corporate PO's Accepted with Approved Credit
- **No Surcharge at Credit Card**

Service Policy
- 1-year parts & labor Warranty
- 2-year Warranty at desktop systems
- 30-day money back guarantee
- Full refund with no restocking fee
- 100% satisfaction guarantee
- Life-Time Toll-Free technical support 1-800-666-5613
- 2nd day part replacement

VISA MasterCard FEDERAL EXPRESS UPS DHL WORLDWIDE EXPRESS

**Money back features no restocking fee, and does not include opened software or shipping charges, RMA required. Prices subject to change. All trademarks are the property of their companys. ©1992 KANIX, inc.*

Computerlane inc.

818-884-8644 • FAX: 818-884-8253
213-625-7325
7500 Topanga Canyon Blvd,
Canoga Park, CA 91303
Hours: M - F 9-6, Sat 10-5 EXPORTS AVAILABLE.

Corporate Accounts Welcome. Call for Discounts on Volume and Consultant Orders.

Prices reflect 5% cash discount

COMPAQ Authorized Dealer

	Cash
ProLinea 3/25zs, 84 MB	$909
ProLinea 4/25s, 240 MB	1595
ProLinea 4/50, 240 MB	2275
DESKPRO 3/25, 120 MB	1695
DESKPRO 4/25s, 120 MB	1810
DESKPRO 4/66, 210 MB	2675
DESKPRO 386/33M, 120 MB	2335
DESKPRO 486/33M, 340 MB	3520
DESKPRO 50M, 340 MB	3995
DESKPRO 66M, 510 MB	4730
Portable 486, 210 MB	4695
Portable 486c (color), 210 MB	6350
Contura 386SL/25, 120 MB	1785
LTE Lite/25, 120 MB	2495
LTE Lite/25c (color), 120 MB	3575
SYSTEMPRO/LT	
486/33, 1020 MB	7552
486DX2/50, 1020 MB	9350

Call for other models-Monitor Extra

AST COMPUTERS

	Cash
Power Exec 386SL/25, 60 Meg	$2185
Power Exec 386SL/25C, 80 Meg	3195
Power Exec 386/25SL, 120 Meg Mono	2555
Power Exec 386/25SLC, 120 Meg Color	3565
Power Premium 4/50	$2290
Power Premium 4/33	1995
Power Premium 4/25s	1725

HARD DISK & MONITOR EXTRA
Call for pricing on other brand name models.

LASER PRINTERS

	Cash
HP Laser IIISI	$3595
HP LaserJet 4M	CALL
HP Laser 4	1410
HP Laser IIIP	CALL
HP IIP Plus	CALL
OKI OL 400, 800	CALL
OKI OL 840 P.S.	1720
Panasonic 4450	1295
NEC Model 97	CALL

Texas Instruments / TOSHIBA

TI TravelMate 4000 (All Models)	CALL
Toshiba 6400mm, 200 Meg	CALL
Toshiba 4400C, 120 Meg	CALL
Toshiba 4500C, 200 Meg	CALL
Toshiba 6400SXC, 120 Meg	CALL

CD ROM/Multi Media

	Cash
NEC CD ROM 37M	$570
NEC CD ROM 74M	680
Sound Blaster Pro	179

BRAND NAMES LOW PRICE LEADER SINCE 1983

SPECIALS

	Cash
AST Prem II 386DX	$800
AST Prem II 486SX	1100
Apple Mac II 5 Meg/40MB	875
Rasterops 1648S Monitor	1200

HARD DISKS

FUJITSU, CONNER, QUANTUM, MAXTOR, SEAGATE, MICROPOLIS, MICRONET

ACS BUSINESS SYSTEMS

Made in USA

All Systems Include:
- Desktop or Tower Case w/4 Meg Ram
- 2 Serial, 1 Parallel, 1 Game (joystick) Ports
- 101 AT Enhanced Keyboard
- 1.2 (5.25") & 1.44 (3.5") TEAC Floppy Drives
- SVGA Card w/1 Meg & SVGA 0.28mm Monitor
- MS DOS 5.0 (complete w/manuals) & Mouse
- MS Windows 3.1 (complete w/manuals) & Mouse

	Cash
486/50 with 200 Meg HD	$2150
486/33 with 120 Meg HD	1860
386/40 with 120 Meg HD	1390
386SX/25 with 40 Meg HD (2 Meg)	950

PRINTERS

	Cash
Epson LQ 570	$289
Epson LQ 1170	625
OKIDATA ML320	315
OKIDATA ML390	460
HP DeskJet 550	699
HP PaintJet XL300	2345
Citizen, Panasonic, Canon	CALL

IBM Authorized Dealer

Manager's Special

	Cash
IBM VP 486DX/33 w/8 Meg, 212MB	1875
IBM VP 486DX/66 212MB	2375

NOTEBOOKS

N45SL-120 Meg, Notebook	CALL
N51SX-80 Meg, Notebook	CALL
ThinkPad 700-120	2750
ThinkPad 700C-120	4050
PS/267-160 Meg	2370

NOVELL® SPECIALS

Netware 386 V.3.11
Authorized Dealer

	Cash
5 Users	$695
10 Users	1395
20 Users	1895
100 Users	3795
250 Users	CALL

LAN BOARDS

	Cash
8 Bit Arcnet	$75
16 Bit Arcnet	160
Novell NE 1000	160
Novell NE 2000	175
8 Port Active Hub	325
Token Ring Card	399
Tokenhub 4-port	355

Call For Other LAN Accessories

SVGA MONITORS

	Cash
NEC 3FGX, 14"	$665
NEC 4FG, 16"	825
NEC 4DS, 16"	875
Viewsonic 4E, 14"	365
Viewsonic 8, 17"	1785
Aamazing, 14"	335

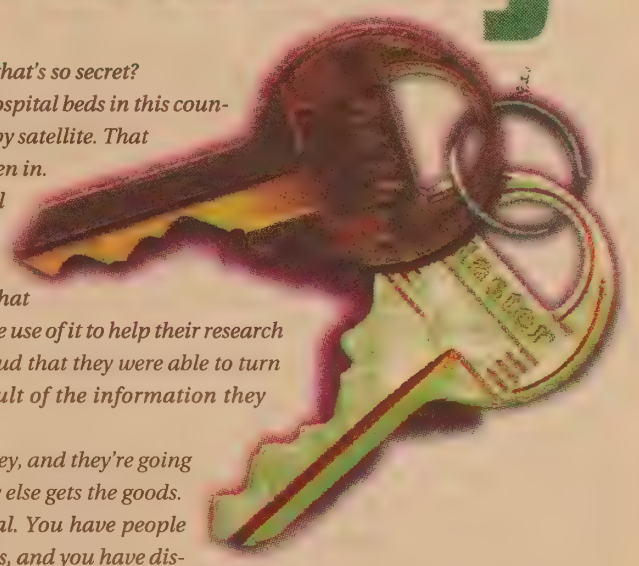
WE STOCK CITIZEN • HITACHI
NEC • HOUSTON INSTRUMENTS
INTEL • OKIDATA • TALLGRASS
ALR • MICROSOFT • PC MOUSE
EPSON • ARCHIVE • WYSE
SUMMAGRAPHIC • CALCOMP

Compaq is a Registered Trademark of Compaq. IBM is a Registered Trademark of International Business Machines. Prices subject to change without notice. * Quantities are limited.

Encryption, Privacy & Data Security

Once the esoteric province of the diplomatic and military communities, encryption is playing an increasingly vital role in digital communications, with applications ranging from secure cellular phones to protection of intellectual property. But, as with all new technologies, encryption is stirring much debate as to its proper use.

BY MARY EISENHART



"Why do you and I need cryptography? What are we communicating that's so secret?

"I remember reading ten or fifteen years ago that a majority of the hospital beds in this country were being billed from one billing agency. The data was coming in by satellite. That means that anybody with a satellite dish near the billing place can listen in. Do we really want all of our medical records available to high-school kids who turn their parents' satellite dish into a big listening post?

"Also, the French equivalent to the CIA has freely admitted that they listen in on American communications whenever they can, and that they turn that information over to the French companies that can make use of it to help their research and development, their bidding on contracts. In fact they're quite proud that they were able to turn an over-one-billion-dollar aircraft contract to the French as a result of the information they obtained." **—Martin Hellman**

"It's obvious that someday people are going to want to sell bits for money, and they're going to need cryptography to make sure that they get paid and that nobody else gets the goods. You have artists, musicians, authors—basically their output is digital. You have people who are their managers or distribution channels, sound or film studios, and you have distribution channels that ultimately end up with the consumer.

"Now that we're talking about nothing but bits, how does the artist feel protected, that he or she is being compensated properly, that their intellectual property isn't being stolen, that it's being presented in the way they intended it?

"It's funny to me that the big-stakes players seem to be Atari and Nintendo and others. This is a mega-billion-dollar business, so they're the ones most interested in protecting their bits today." **—Jim Bidzos**

Until fairly recently, very few people outside the military, intelligence, and academic communities thought much about encryption; for most people, including personal computer users, it was an esoteric subject having little to do with the work at hand.

In the last few years, however, the picture has changed considerably, for a number of reasons. As networks, electronic mail, and collaborative computing have become widely used, the need for ensuring that messages are readable only by their intended recipient, and that documents are indeed authored by their purported creators, has become ever more urgent. Similarly, providers of content, from databases to entertainment software to CD-ROM clip art, want to be assured that the digital crown jewels aren't going to be copied

and bootlegged, and that the vendors and creators of the content are properly reimbursed.

These issues pale in comparison to the security issues raised by the widespread adoption of wireless communications. It has been reported, for instance, that a very lucrative form of industrial espionage consists of driving up and down the Bayshore Freeway eavesdropping on Silicon Valley's cellular phone conversations.

As a result, encryption, once the province of hobbyists and people with security clearances, is entering the mainstream, as hardware and software vendors adopt it as the best solution to their customers' security needs.

At the same time, however, the law enforcement community views the spread of robust encryption technology as a threat to its activities, and has regularly introduced legislation in Congress (most recently the failed Digital Telephony bill—see Issue #101) to prevent the use of encryption technology that would preclude law enforcement's ability to obtain plain-text versions of wiretapped communications. Consequently, there's a growing conflict between vendors for whom strong encryption is a competitive necessity and the law enforcement and intelligence communities.

TOWARD USER-TRANSPARENT ENCRYPTION

The technical underpinnings of today's cryptography offerings are enormously complex, and the governmental labyrinth of standards bureaus and interested agencies rapidly becomes mind-numbing to the nonprofessional. But as it's incorporated into a growing range of software and hardware products, encryption on personal computers will soon be as ubiquitous, and as user-transparent, as Dolby on consumer audio equipment.

Jim Bidzos is president of RSA Data Security in Redwood City, a company which provides encryption technology to end-user and OEM customers that include Microsoft, Apple, Novell, and a host of others. RSA's first OEM customer, in 1986, was Lotus, which incorporated the technology into its groupware product Lotus Notes.

Bidzos explains: "Lotus Notes is a perfect example of where encryption is headed. There are a quarter of a million Lotus Notes users as of today, sending over one million RSA-encrypted messages every day, and the best part is, they don't even know it.

"In Lotus Notes, I would register you as a user and you would get an account, and that's all you'd know. But in fact what you've gotten is your own RSA key pair, your digital signature; everything you send will be encrypted and authenticated and it works great. You have an account, you send messages. If somebody tries to impersonate you and read your mail, it doesn't happen. A quarter of a million people are sending a million messages every day, and not even really needing to be aware of it, but enjoying that level of privacy and security; I think it's a perfect example of how this is done right.

"Now take Lotus, Microsoft, Sun, Novell, and you'll see where this is heading; RSA is coming to be a standard part of the Macintosh, accessible to application developers. That's the real beauty of it, I think. All I want is my next favorite applications to have security built in.

"By putting a high-quality implementation that is absolutely trusted by the people who know the most about this stuff inside the operating system of the Mac and of Windows NT and of UNIX, and giving application developers access to simple interfaces—encrypt, sign, verify—this is the way you give the most number of people what they want, which is absolute security with no overhead at no cost. Isn't that the way Dolby is?"

HOW IT WORKS

How does the process of encryption work on a personal computer?

Stanford professor Martin Hellman, whose work has played a key role in the evolution of encryption technology for over twenty years, explains: "First of all, we'll assume your personal computer is secure. When you're communicating messages over the Internet or whatever email system you're using, you're much more vulnerable, because your messages are going through all these intermediate nodes in the network and people can examine them looking for keywords.

"If you assume your PC is secure, you'd be asked [by a software prompt] to enter your key into the PC. You might want to keep the same key for a long time, or you might want to change the key on a daily or weekly basis.

"Think of it as a black box—I've got a piece of software that accepts the key, it accepts a message to be encrypted or decrypted, and it does it for you. If it's encrypting, it takes a message that looks like English—'Dear Mary, we'll meet at 1:15 on Monday'—and out comes absolute garbage that looks like random bitstream. If you take that same random bitstream back in, and decipher it with the same key, out comes 'Dear Mary, we'll meet at 1:15 on Monday.' You don't have to understand what's going on inside that software any more than you have to understand what's going on inside your compiler or spreadsheet; from a user point of view, it scrambles it, it unscrambles it."

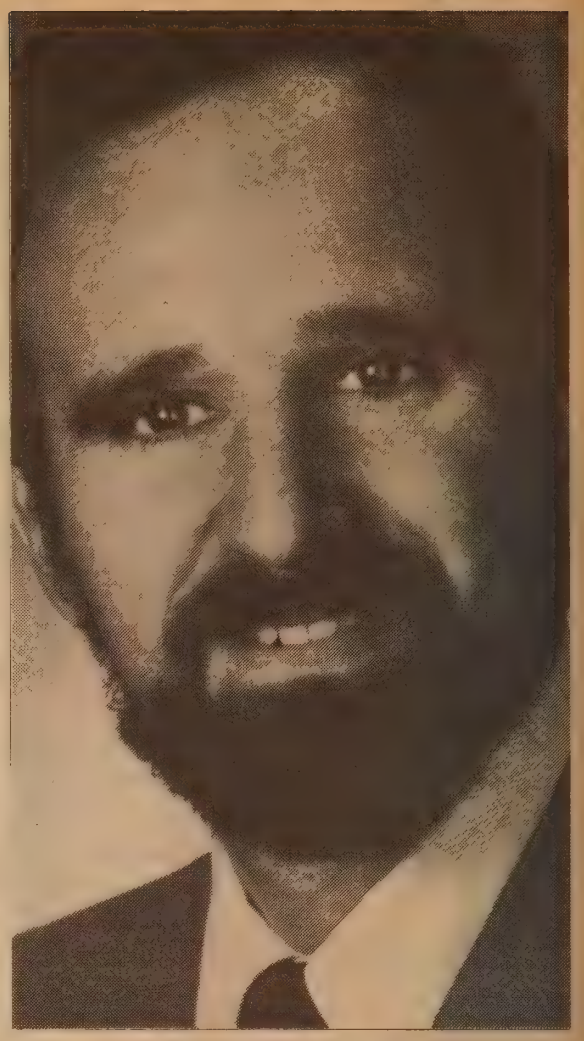
No matter how good the encryption technology, however, the security of the individual message depends greatly on the length of the key used (another factor is the number of iterations of encryption—i.e., the plain-text message is encrypted using one key, then the encrypted message encrypted again with another key, and so on). Keys are measured in bits; the more bits to the key, the more secure it's likely to be.

Hellman explains: "You have one bit. A bit is a zero or a one. There are two possibilities. If you have two bits, then the first bit can be a zero or a one, the second bit can be a zero or a one, and you have four possibilities—00, 01, 10, and 11.

"If you think of a key as being like the combination to a lock, and if there are 56 bits, you'll have to dial in the right number 56 times. How many possibilities are there? There's 2, times 2, times 2, 56 times, which we abbreviate as 2^{56}. To put that in numbers you can relate to, that's roughly 100,000 million million keys. So trying each one is kind of annoying."

DES

The Data Encryption Standard (DES) was promulgated in 1976 by the National Bureau of Standards (now the National Institute of Science and Technology) as the basis for hardware and software security



Martin Hellman: "DES is extremely strong, and at the same time extremely weak. It's extremely strong against your next-door neighbor, or against even a commercial adversary, but extremely weak against an intelligence organization or any other entity that doesn't have to live within the law, and which has budgets on the order of $1–10 million they can invest in it."

COMPUTER WHOLESALE OPEN TO THE PUBLIC

WE WILL MEET OR BEAT ANY ADVERTISED PRICE!*

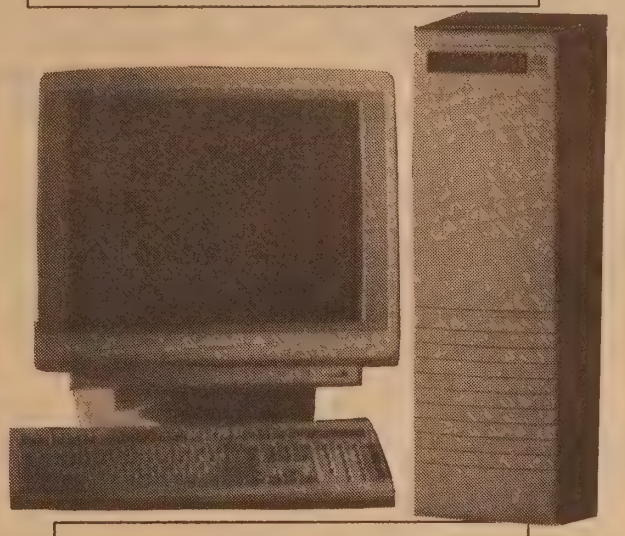
HOME SYSTEM
386-40DX **$1199**
INCLUDES:
- 64K CACHE
- 4MB RAM
- 1.2&1.44MB FLOPPY DRIVE(TEAC)
- IDE 2S/1P/1G
- 120MB HARD DRIVE
- MINITOWER CASE
- 101 ENHANCED KEYBOARD
- SVGA CARD W/1MB
- 14" SVGA MONITOR .28
- DOS 5.0
- WINDOWS 3.1
- MOUSE W/PAD

AXL TECHNOLOGY CAD STATION
486-50DX **$2399**
INCLUDES:
- 256K CACHE
- 8MB RAM
- 1.2&1.44MB FLOPPY DRIVE(TEAC)
- IDE 2S/1P/1G
- 210MB HARD DRIVE
- AXL FULLTOWER CASE
- 101 ENHANCED KEYBOARD
- ORCHID FAHRENHEIT 1280X1024 CARD
- 15" 1280X1024 N.I. MONITOR .28
- DOS 5.0
- WINDOWS 3.1
- MOUSE W/PAD

intel inside

CALCOMP 16BUTTON DIGITIZER $289

STARTER SYSTEM
386-33SX W/PANASONIC KX-P1180 PRINTER
INCLUDES: **$1099**
- 2MB RAM
- 1.2&1.44MB FLOPPY DRIVE(TEAC)
- IDE 2S/1P/1G
- 80MB HARD DRIVE
- MINITOWER CASE
- 101 ENHANCED KEYBOARD
- SVGA CARD W/512K
- 14" VGA MONITOR
- DOS 5.0, WINDOWS 3.1, AND MOUSE



$200 W/PURCHASE OF 486 SYSTEM

NOTEBOOK SIZE PC
INCLUDES:
- 2MB RAM
- 1.44MB FLOPPY DRIVE
- IDE 2S/1P/1G
- SVGA VIDEO W/512K

ADD:
- 80MB HARD DRIVE
- 101 ENHANCED KEYBOARD
- 14" SVGA MONITOR

486-33DX
INCLUDES: **$1499**
- 256K CACHE
- 4MB RAM
- 1.2&1.44MB FLOPPY DRIVE(TEAC)
- IDE 2S/1P/1G
- 120MB HARD DRIVE
- AXL MEDIUM TOWER CASE
- 101 ENHANCED KEYBOARD
- SVGA CARD W/1MB
- 14" SVGA MONITOR .28
- DOS 5.0
- WINDOWS 3.1
- MOUSE W/PAD

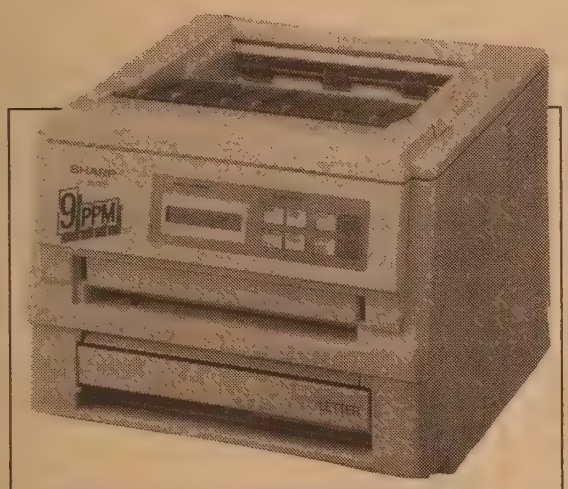
intel inside

AXL TECHNOLOGY LOCAL BUS
INCLUDES:
- 256K CACHE
- 4MB RAM
- 1.2&1.44MB FLOPPY DRIVE(TEAC)
- 32BIT VESA LOCAL BUS CONTROLLER
- 2S/1P/1G
- 120MB HARD DRIVE
- AXL MEDIUM TOWER CASE
- 101 ENHANCED KEYBOARD
- 32BIT VESA LOCAL BUS VIDEO CARD
- 14" SVGA MONITOR .28
- DOS 5.0
- WINDOWS 3.1
- MOUSE W/PAD

intel inside

486-33DX	$1699
486-50DX	$1859

SPECIAL



SHARP JX-9500H **$645**
- 9PPM
- HPIIP COMPATIBLE

Acer

2400 INTERNAL MODEM	$ 27
2400 EXTERNAL MODEM MNP5	49
9600/2400 INTERNAL FAX/MODEM	56
9600/2400 EXTERNAL FAX/MODEM	82
9600/2400 POCKET FAX/MODEM	99
9600 INTERNAL MODEM V.32/V.42	167
9600 EXTERNAL MODEM V.32/V.42	188
14.4/9600 INTERNAL MODEM/FAX	209
14.4/9600 EXTERNAL MODEM/FAX	236
SUPERFAX PRO FOR WINDOWS WITH PURCHASE OF FAX/MODEM	15
WINFAX LITE FOR WINDOWS WITH PURCHASE OF FAX/MODEM	12

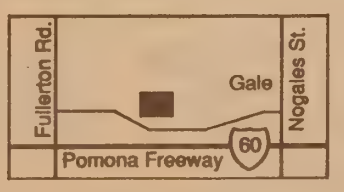
*PRICES SUBJECT TO CHANGE WITHOUT NOTICE.
RESELLERS AND CORPORATE PRICING AVAILABLE. PLEASE CALL EXT. 182 OR 177.

PC CLUB

18537 E. Gale Ave., #B
Industry, CA 91748
Tel: (818) 913-2582
Fax: (818) 913-0123

BUSINESS HOURS:

MONDAY-FRIDAY: 9:00A.M. - 8:00P.M.
SATURDAY: 10:00A.M. - 7:00P.M.
SUNDAY: 11:00A.M. - 6:00P.M.



US MACH = Best Price, Service, & Quality

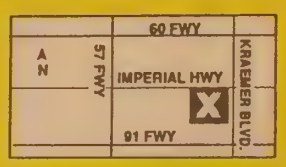
USM
US MACH

Incorporated 1983

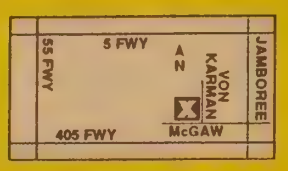
VISA MasterCard

HOURS: M-F 9-6 • Sat 10-5

Price and availability subject to change.
No surcharge for credit cards.



USM BREA
2500 Imperial Hwy., Unit 132
Brea, CA 92621
714/255-0113
FAX: 714/255-0115



USM IRVINE
17145 Von Karman Ave., Ste. 109
Irvine, CA 92714
714/252-8335
FAX: 714/252-8354

Our No. California Locations:
USM Sunnyvale
408/738-8291 FAX: 408/738-8299
USM Palo Alto
415/325-0651 FAX: 415/325-2459
USM Fremont
510/623-9040 FAX: 510/623-7592
USM So. San Francisco
415/952-5885 FAX: 415/266-9134
USM Santa Clara
408/980-0603 FAX: 408/980-0604

USM Emerald SYSTEM SPECIALS

386SX-33MHz

- 2MB, 70ns RAM
- 80MB Hard Disk (120MB HD Add **$50**)
- 2 Floppies—1.2MB & 1.44MB
- SVGA Monitor 1024x768 .28 dp
- SVGA Card w/1MB
- 101 Enhanced Keyboard
- 2 Serial, 1 Parallel, 1 Game port
- Enhanced Case, Minitower/Desktop

$895

386SX-25, 2MB	$875
386DX-33/128k 4MB	1095
386DX-40/128k 4MB	1095

90 Days Same as Cash*
Ask about Long-term financing
*OAC

OPTIONS:

Non-Interlaced Monitor	Add **$70**
256k Cache Upgrade	Add **$25**
Multimedia Upgrade Kits	**Lowest Price**

OTHER UPGRADE OPTIONS AVAILABLE
Due to fluctuating CPU & RAM costs, please call to confirm prices.

486SX-25MHz

- 4MB, 70ns RAM
- 120MB Hard Disk (200MB HD Add **$120**)
- 2 Floppies—1.2MB & 1.44MB
- SVGA Monitor 1024x768 .28 dp
- SVGA Card w/1MB
- 101 Enhanced Keyboard
- 2 Serial, 1 Parallel, 1 Game port
- Enhanced Case, Minitower/Desktop

$1195

486-DLC-33/128k cache	$1295
486DX-33/128k cache	1395
486DX-50/128k cache	1595
486DX2-66/128k cache	1695

US MACH PERIPHERAL SUPER SALE!!

HARD DRIVES

WESTERN DIGITAL

80MB/120MB	$205/265
170MB/200MB	295/355
340MB	575

CONNER

40MB/80MB	$145/200
120MB170MB	250/290
200MB/520MB	370/890

Maxtor®

120MB/200MB	$250/360
340MB/535MB	590/880

MOTHERBOARDS

486DX2–66, 128k	$750
486DX-50 128k	675
486DX-33, 128k	485
486SX-25, 128k	305
386DX-40/33, 128k	190/180
386SX-33	130

TAPE BACKUP

COLORADO DJ10	$195
COLORADO DJ20	245

CD ROM

SONY CDU-535 Int. w/intrfc	$325
SONY CDU-541 Int. SCSI	455

GRAPHIC CARDS

TRIDENT SVGA 1MB	$60
DIAMOND Spdstr 24x 1MB	170
DIAMOND Stealth 1MB Ac.	220
ORCHID PRO IIS	139
ORCHID Farenheit VLB	160
ORCHID Farenheit VA/VLB	205

SCSI CONTROLLERS

ADAPTEC 1522 BK SCSI adpt kit	$155
ADAPTEC 1542 BK SCSI adpt kit	250
ADAPTEC 1742 EISA SCSI adpt kit	450

MATH Co-PROCESSORS

ULSI 387DX-33/40	$80/95
ULSI 387SX-25/33	70/75

KEYBOARDS

US MACH 101 Enhanced	$24
US MACH 101 Enh. Click	32
FOCUS 2001	42
MAXISWITCH 101	40
KEYTRONICS 101	42
NORTHGATE 101/102	79/79
NORTHGATE ULTRA	109

PRINTERS

CITIZEN 200GX	$160
CITIZEN GSX-240 (Quiet)	310

MICE

LOGITECH First	$45
LOGITECH Trakman II Serial	82
LOGITECH Trakman Portable	102
LOGITECH Combo Mouseman	66
MICROSOFT Bus/Serial	88/77

NETWORK CARDS

SMC Ethernet, 16-bit 10BT	$145
SMC Ethernet, 16-bit COAX	145
SMC Ethercard & Elite 16T	155
INTEL Ether Exp. 16 Self. Con.	145
INTEL Ether Exp. EISA COAX	645

FAX MODEMS

INTEL Satisfaxtion 14.4 - 400 IN	$415
INTEL Satisfaxtion 14.4 - 400 EX	455
INTEL Satisfaxtion 9600 Mod. 100	105
INTEL Satisfaxtion 9600 Mod. 200	305

MONITORS

NEC 3FG/4FG	$660/765
NEC 5FG/6FG	1350/2350
VIEWSONIC 4E/6E	295/330
VIEWSONIC 5E/6FS	390/590
VIEWSONIC 7/8	990/1570
STAND. TECH. 17" VESA	645
STAND. TECH. 14" NI	345
STAND. TECH 14" Inter.	275

MICRONICS

VL-BUS SYSTEMS
486-33 VL-BUS

- MICRONICS 486-33 VL-BUS
- 4MB, 70ns, exp. to 64MB
- 64k cache exp. to 256k
- Maxtor 130MB, 15ms
- Northgate Omnikey 101
- TEAC 1.2 & 1.44 Floppies
- MICRONICS VL-BUS Video-Tseng
- Viewsonic 6E Monitor
- MICRONICS VL-BUS IDE Cntlr.
- Built-in 2 Serial/1 Parallel Ports
- Mini Tower/Desktop Case

$1993

MICRONICS

VL-BUS SYSTEMS
486-66 VL-BUS

- MICRONICS 486-66DX2 VLB
- 8MB, 70ns, exp. to 64MB
- 256k Cache
- Conner 170MB, 16ms
- Northgate Omnikey 101 NI
- TEAC 1.2 & 1.44 Floppies
- ATI MACH 32 VL-BUS Video
- Viewsonic 6E Monitor
- MICRONICS VL-BUS IDE Cntlr.
- Built-in 2 Serial/1 Parallel Ports
- Mini Tower/Desktop Case

$2793

ORCHID
VL-BUS
486-50DX

- ORCHID Superboard 486-50 VLB
- 8MB, 70ns
- 256k Cache
- Conner 170MB, 16ms
- Northgate Omnikey 101
- TEAC 1.2 & 1.44 Floppies
- ORCHID Fahrenheit VA-VLB
- Viewsonic 6E Monitor
- ORCHID VL-BUS IDE
- 2 Serial/1 Parallel/1 Game
- Mini Tower/Desktop Case

$2493

Factory Authorized Distributor with the Area's Largest Selection of USA Made Motherboards

AMI High Performance Motherboards

Super Systems AMI/MICRONICS Guaranteed Lowest Prices by Component

Best EISA Solution from AMI

- AMI Enterprise II EISA 486-33/50/66
- AMI FastDisk EISA SCSI Cache Adapter
- AMI EISA Fast View SVGA Card

NEW! Lowest Prices Ever From AMI!!

Also Available - AMI Super Voyager 486-33/50/66

NEW PRODUCTS

Enterprise III, Super Voyager VLB, Baby EISA, FastDisk NC, FastLAN, Omni Business Partners

MICRONICS

- New VL-Bus 486-33/50/66
- New VL-Bus ATI Mach 32

New! VL-Bus Standard

- 386SX-25 • 386-25 BMP
- 386-33 GCP 256k Cache
- 486-33/50DX GCP 256k Cache
- 486-50/66DX2 GCP 256k Cache
- 486-33/50 EISA 256k Cache

ORCHID VESA LOCAL BUS

Superboard 486-33/50/66 VLB

Fahrenheit VA
Fahrenheit VA-VLB
Sound Producer Pro
Celsius 9000

ORCHID NEW HOT Products

Guaranteed Lowest Price on Orchid Systems

FAX MODEM SALE

SmartConnect 9624i $59

DataFax 9624i	$109
Hi-Per 96/144	$229
Comm-panion 9624	$129
Comm-panion 144/96	$299

NOTEBOOKS

MITAC 386SL 25 2MB, 80MB HD	$1495
LEADING EDGE 386SL 25 Color	$2295

WE WELCOME PO'S FROM UNIVERSITY, SCHOOL DISTRICTS, & COUNTY

MULTIMEDIA

LATEST PRODUCTS...LOWEST PRICES

CREATIVE
CREATIVE LABS, INC.
SOUND BLASTER.

Pioneer of Multimedia Technology!

MULTIMEDIA SOUND BLASTER 16 ASP
SOUND BLASTER UPGRADE KIT
SOUND BLASTER PRO BASIC
SOUND BLASTER PRO
PORT BLASTER
MIDI BLASTER
WAVE BLASTER

Reseller News Editors' Choice

SOUND BLASTER CD-ROM UPGRADE KIT
SOUND BLASTER MULTIMEDIA STARTER KIT
SOUND BLASTER MULTIMEDIA UPGRADE KIT

MEDIA VISION

Multimedia Experts!

PC Multimedia PC

FUSION CD
THUNDER BOARD for WINDOWS
PRO AUDIO SPECTRUM 16
SPECTRUM PLUS

PRO AUDIO SPECTRUM 16

FUSION CD

products in the US, and has been the subject of debate as to its actual effectiveness ever since.

Hellman explains the standard's development: "As early as 1968, IBM recognized the need for encryption as a result of the growing use of time-shared computers and computers in communications. So they started work as early as 1968, and it came to fruition with DES, which was announced in March of 1975.

"When NBS announced it as the standard, IBM agreed to put its patent rights largely in the public domain, that is, they would issue royalty-free licenses to meet the standard. At that point IBM was still powerful enough in the computer industry that if they had had proprietary rights to the standard, they would have aggravated their antitrust problems. Also at that point they were still a large enough part of the computer market that whatever was good for computing was good for IBM, so their putting it in the public domain made some sense. There are also some theories that by putting it in the public domain as a national standard, they relieved themselves of potential liability should it ever be broken."

Apparently at that point the NBS also recognized the need for a standard, and, Hellman suspects, so did the ultra-secret National Security Agency. NSA's concerns decades ago illustrate the ongoing ambivalence of the law enforcement and intelligence agencies about encryption.

Says Hellman: "NSA has two parts, COMSEC and COMINT. The COMSEC people are the ones who want to protect American communications from prying foreign governments; the Communications Intelligence people are the prying eyes of the American government trying to spy on other governments' activities.

"You can see the tradeoff—the COMSEC people want a high level of security to protect the communications that you and I, or IBM and Bell Labs, carry on with each other. They would want a very secure DES. The Communications Intelligence people would worry that if this is publicly available and is used by their adversaries, they won't be able to know what's going on in Libya or Iraq, or other places where it's important.

"We have a problem, in that the technical expertise within NSA is so much greater than the technical expertise within NIST in cryptography that if NIST developed things, would we feel comfortable with them? It's a double bind all around. If NSA's not involved, we're unhappy because we worry that it might be weak. If they're involved, we're worried because they might have weakened it.

"In the '70s, the communications security side of NSA was very worried about Soviet spying. They were aware that the Soviets were listening in on a lot of American communications. So NSA was very concerned, and may even have prodded NBS to come out with the Data Encryption Standard—but they have this problem of making sure it's not so good they lose their communications intelligence."

Given the provenance of the standard, the entire history of DES is fraught with concern—of varying degrees of hysteria—as to just how secure the technology actually is. Hellman takes a balanced view:

"Let's take the point of view that DES is secure. What is the evidence for that?

"No one has figured out how to break it [the full, 16-iteration implementation of DES] short of exhaustive search, trying one key after another. That's like, with a combination lock, trying one combination after another until you open the lock. We've looked for shortcuts to breaking DES. No one in the open literature has published anything that breaks the full DES significantly faster than exhaustive search.

"However, if I've intercepted a message you sent, and you're using DES, and I've got a copy of DES, I can take that message and, at whatever speed my computer will allow me to change keys, change the key and try to decipher it. There's nothing to stop me from programming my computer to accept keys at the rate of a million a second if it'll run that fast.

"Unlike with passwords, where it's only the central computer that knows whether or not you're entering the right password, here you're able to tell when you hit the right key, because when I take this garbled-looking message that I intercepted and decrypt it with the right key, out comes a message that looks like 'Dear Mary, we'll meet at 1:15 on Monday.' And you can recognize it fairly easily using computer-based techniques. If you built custom hardware, you could try DES keys at the rate of a million a second.

"Now how hard is it to do exhaustive search? I would argue that exhaustive search is something that a dedicated adversary can afford to do. Back in the '70s we argued that it would take a $20 million machine, and maybe we were optimistic, maybe it was a $50 million machine. But today, it's somewhere between $1–10 million capital costs; once I've designed it I could make replicas for somewhere between $100,000 and $500,000 apiece. Most of it's the design costs.

"Well, on the one hand, that's a pretty good level of security. If someone's going to go out and spend millions of dollars to break your system, is your next-door neighbor likely to do it? Is the hacker down the street likely to do it? No. Is IBM even likely to do it? No, because it involves significant enough resources that even if somebody at IBM wanted to do it, he'd have to get other people involved, and as soon as you do that and it clearly goes counter to any company's stated legal policy, you just don't dare do it in a company.

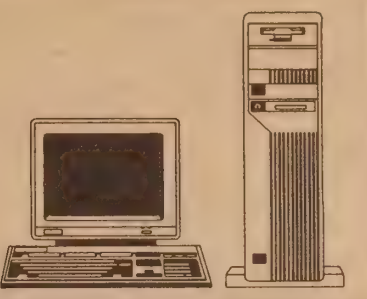
"On the other hand, if your opponent's the Mafia, you'd have to worry. If your opponent is the French intelligence service, you've got to worry. So that's basically why DES is extremely strong, and at the same time extremely weak. It's extremely strong against your next-door neighbor, or against even a commercial adversary, but extremely weak against an intelligence organization or any other entity that doesn't have to live within the law, and which has budgets on the order of $1–10 million that they can invest in it."

As for the oft-expressed fear that the NSA built trapdoors into DES to ensure easier eavesdropping for itself, Hellman has changed his views somewhat over the years. "While I was very concerned in the 1976 time frame about a trap door because we were getting so little information from IBM and NBS and anyone else that was involved in this, and we found suspicious structures, subsequently over the next couple of years I had some very direct con-

Jim Bidzos: "History is on the side of the guy from NSA. What we're trying to accomplish by this policy of keeping export controls on US companies is very effective. I don't think Clinton will say, 'No, it's more important that Apple be able to sell strong encryption in France.'"

CONTEMPORARY COMPUTER TECHNOLOGY

820 Thompson Ave. Unit 30
Glendale, CA 91201
Tel: (818) 551-9171 • Fax: (818) 551-9173



486 VESA EISA LOCAL BUS

- ❒ 8MB RAM Exp. to 64MB
- ❒ 256K Cache Memory
- ❒ Medium Tower Case
- ❒ 1.2 & 1.44MB Floppy Drive
- ❒ 210MB IDE Hard Drive
- ❒ EISA 32-BIT IDE Controller
- ❒ 32-BIT VL-Bus SVGA Card With 1MB
- ❒ 14" Non-Interlaced .28mm SVGA Monitor
- ❒ 2 Serial/1 Paralel/1 Game
- ❒ Enhanced 101 Keyboard
- ❒ Mouse

486DX-33	$2050
486DX2-50	$2150
486DX2-66	$2350

486 EISA WINPOWER

- ❒ 256K Cache Memory
- ❒ 8MB RAM Exp. to 32MB
- ❒ Medium Tower Case
- ❒ 1.2 & 1.44MB Floppy Drive
- ❒ 170MB 15ms IDE Hard Drive
- ❒ EISA 32-BIT IDE Controller
- ❒ Diamond Speed Star 24X With 1MB SVGA Card
- ❒ 14" Non-Interlaced .28mm SVGA Monitor
- ❒ 2 Serial/1 Paralel/1 Game
- ❒ Enhanced 101 Keyboard
- ❒ Mouse

486DX-33	$2035
486DX2-50	$2125
486DX-50	$2265
486DX2-66	$2365

VESA LOCAL BUS

- ❒ 256K Cache Mem
- ❒ 4MB RAM Exp. to 32MB
- ❒ Medium Tower Case
- ❒ 1.2 & 1.44MB Floppy Drive
- ❒ 170MB 15ms IDE Hard Drive
- ❒ 32-BIT VL-Bus SVGA Card With 1MB
- ❒ 32-BIT VL-Bus IDE Controller
- ❒ 14" Non-Interlaced .28mm SVGA Monitor
- ❒ 2 Serial/1 Paralel/1 Game
- ❒ Enhanced 101 Keyboard
- ❒ Mouse

486DX-33	$1695
486DX2-50	$1795
486DX2-66	$1995

486 ISA STATION

- ❒ 64K Cache Mem. Exp. 256K
- ❒ 4MB RAM Exp. to 32MB
- ❒ Medium Tower Case
- ❒ 1.2 & 1.44MB Floppy Drive
- ❒ 130MB 15ms IDE Hard Drive
- ❒ Trident 1MB 1024X768 SVGA Card
- ❒ 14" Non-Interlaced .28mm SVGA Monitor
- ❒ 2 Serial/1 Paralel/1 Game
- ❒ Enhanced 101 Keyboard
- ❒ Mouse

486DX-33	$1395
486DX-50	$1595
486DX2-66	$1695

386DX-40 MHz

- ❒ 64K Cache Memory
- ❒ 4MB RAM, Exp. to 32MB
- ❒ Mini Tower Case
- ❒ 1.2 & 1.44MB Floppy Drive
- ❒ 130MB 15ms IDE Hard Drive
- ❒ IDE HDD/FDD Controller
- ❒ Trident 1MB 1024X768 SVGA Card
- ❒ 14" Non-Interlaced .28mm SVGA Monitor
- ❒ 2 Serial/1 Paralel/1 Game
- ❒ Enhanced 101 Keyboard
- ❒ Mouse

$1099

386SX-33 MHz

- ❒ 2MB RAM, Exp. to 16MB
- ❒ Mini Tower Case
- ❒ 1.2 & 1.44MB Floppy Drive
- ❒ 85MB 15ms IDE Hard Drive
- ❒ IDE HDD/FDD Controller
- ❒ Trident 512K 1024X768 SVGA Card
- ❒ 14" .28mm SVGA Monitor
- ❒ 2 Serial/1 Paralel/1 Game
- ❒ Enhanced 101 Keyboard
- ❒ Mouse

$859

PERIHERALS OPTIONS

1 MB SIMM Memory - 70ns	$33	Trident 1MB SVGA Card	$60
4 MB SIMM Memory - 70ns	$130	Diamond Speed Star 24X	$185
85MB IDE Hard Drive	$220	2400 Int. Modem	$35
130MB IDE Hard Drive	$265	96/96/24 S&R Int. Fax Modem	$60
170MB IDE Hard Drive	$295	9600/14400 Int. Fax Modem	$245
210MB IDE Hard Drive	$365	Colorado 120MB Tapebackup	$195
14" 0.28mm SVGA Monitor	$255	Colorado 250MB Tapebackup	$255
14" 0.28mm NI-SVGA Monitor	$285	Mitsumi Int. CD-ROM	$295
15" 0.28mm NI-SVGA Monitor	$465	Sony 31A Int. CD-ROM	$325
17" 0.28mm NI-SVGA Monitor	$855	MS-DOS 5.0	$35
MAG 17F NI-SVGA Monitor	$1070	Windows 3.1	$35

- ❒ One Year Parts and Labor Warranty for All Systems
- ❒ 72 Hours Burned-in Test for All Systems
- ❒ Prices and Availability Subject to Change Without Notice

FINANCING AVAILABLE ! (Subject To Approval)

WE ACCEPT VISA & MASTER CARD

BUSINESS HOURS: MON - FRI 9 am - 5 pm
SATURDAY 10 am - 4 pm

LASERMASTER WINPRINT SERIES

WINPRINTER 800
800X800 DPI
POSTSCRIPT & PCL COMP.
$ 1350

WINJET 800
UPGRADE HP II, IID, III & IIID TO 800X800 DPI RESOLUTION
POSTSCRIPT & PCL COMP.
$ 650

WINPRINTER 600XL
600 TRUE DPI
LARGE FORMAT 11X17"
POSTSCRIPT & PCL COMP.
$ 3995

WINJET 1200
UPGRADE HP IV TO 1200X1200 DPI RESOLUTION
POSTSCRIPT & PCL COMP.
$ 795

EPSON PRINTERS

LX810	$ 179.00	LQ1170	$ 615.00
FX870	$ 299.00	ACTION LASER II	$ 699.00
LQ570	$ 265.00	EPL-8000	$ 1325.00
LQ870	$ 450.00	ACTION 3250 (DOT MATRIX)	$ 210.00
LQ1070	$ 385.00		

versations with people at IBM, that lead me to believe that there are no trapdoors in DES.

"However, NSA and its foreign equivalents have much more experience than the academic community at production cryptanalysis—having thousands upon thousands of people you want to spy on, and a huge budget to try and do it. So my guess is they know a lot of things we don't know in that area. And so I think they know ways to break DES faster than exhaustive search. It's only a guess on my part, but it's based on general principles that they can apply to any system."

PUBLIC KEY AND RSA

DES is an example of what's called private-key encryption—sender and recipient share a common key, which in turn creates some security problems. For instance, one party could accidentally lose the key or inadvertently transmit it to a third party. Alternatively, one party could readily impersonate the other.

Both these problems are addressed with an alternative technology codeveloped by Hellman, public-key cryptography. The RSA algorithm (named after Rivest, Shamir, and Adelman, the scientists who created it) is the basis for the RSA Data Security products.

He explains, "With private key cryptography, you and I share a common secret key if we want to communicate with each other, and it's got to be kept secret, so we have to have some way to get this secret key from me to you or you to me, or from some key distribution authority to the two of us.

"Now in the military and the diplomatic community, they've traditionally used couriers, the diplomatic pouch, armed guards, to take keys around. But if you and I want to talk by telephone, to have an armed guard carry a key from me to you before we talk by telephone or before our computers talk in an electronic mail exchange, is really annoying. So key distribution, which was a big problem even in the military and diplomatic communities, was going to be a horrendous problem for commercial use.

"Business needs public keys more than the military does. The military can afford couriers, and they can put a lot of money into security that business cannot. Security is the utmost concern in the military; it's not the utmost concern in business. Also, in the military, you have a very limited number of connections that can be made—I don't talk to just anybody; I talk to a few specific people. Whereas in business it doesn't work that way. You have many more connections possible, and so public-key encryption's more important in a commercial system.

"Basically there are three algorithms that you'd have in a public key system. One is a key generator, which generates a public key/private key pair. This algorithm says, 'Give me a random input.' So you might sit at the keyboard and bang away for a while, type in your favorite poem, your social security number, your name, your children's names, any random stuff that comes to mind for a while, to generate enough random data that nobody could possibly reconstruct that exact same sequence in the exact same order.

"It generates a very long random number as the result of this, and that random number is fed into this key generator algorithm, and it churns away for a few minutes, and out comes a public key, which you can tell to anyone, and a secret key, which you'd better keep secret.

"Then we have to have an algorithm that will do encryption, and one that will do decryption. If we want to do key exchange, that is, talk privately, I'd get your public key somehow, and I'd say, 'Dear Mary, I want to talk to you, use the following 56-bit—or better, 168-bit—number as our private key in a DES system.' Instead of having a courier take that key to you, I use your public key to encipher it and tell you what it is. I then send it to you; you get this message, you know that it's a message of this form, it has some identification that says it's a message enciphered in your public key. You take out your secret key, and use the secret key to decrypt the message, and now you know what 168-bit key I want to use with DES.

"So you have three modules—the key generator, which accepts random output and outputs a private key and a public key; the enciphering module, which accepts the public key and a message and puts out an encrypted message; and then the decrypting module, which accepts a secret key and a garbled message and puts out an un-garbled message, if the secret key that you put into it is the one that goes with the public key that was used to generate the message.

"The other thing public key does is give you a digital signature. Think about the problem—you and I reach a business agreement electronically. We want to sign it. We want it to be a valid contract. How do we do that?

"If we're using a private key system like DES, I might encipher the message in the secret key we share, and send it to you and say, 'Here, you know it came from me because no one else has this secret key.' Well, there's a problem—*you* have that secret key. It prevents a third party from forging messages, so if we trust each other and we're only worried about third-party forgeries, then DES is fine.

"But in most business communications, it's exactly the opposite—we do trust each other, but we worry that someone might later, under duress, change something or forget. Whatever it is, we want to have the equivalent of a signature.

"What you can do if you have a public key system like RSA is—let's say we reach an agreement: 'Dear Mary, I will pay you $5000 if you do the following programming work for me.' You want me to sign that. I operate on it with my secret key—whether you act on it with the public key or the secret key, it garbles it totally. So I send you the garbled-up key. The public key and the secret key are roughly inverse operations, so you could take my public key, apply it to the garbled-up message, and see that out comes the agreement that we reached.

"Now, if later I disclaim having signed that, what do you do? You take the garbled version to a judge. The judge looks up my public key and checks that when he acts on the message with the public key out comes 'Dear Mary, I will pay you...' How does the judge know that I signed it? Going from the message to the garbled version, I needed to use my secret key. The public key that everybody has can only go from the garbled version to the clear-text version. The problem you'd have if you wanted to forge this would be to go from the clear-text version to the garbled version, which requires my secret key, which you don't know.

"That's called a digital signature."

Martin Hellman: "It's quite clear that the powers that be, clearly NSA and perhaps the FBI, don't want a public key exchange standard. Why? Because if you and I can change our keys real rapidly, so can the Ayatollah and Qaddafi and all those guys."

POLICY ISSUES

The current focal point in Washington of the conflicting interests between industry and law enforcement is the Digital Signature Standard, in which the customer-driven industry wants the dual-function (privacy and digital signature) RSA adopted as a standard, while law enforcement and intelligence are lobbying hard for a signature-only standard. Says Hellman, "It's quite clear, and it was said at the RSA Data Security conference publicly, that the powers that be, clearly NSA and perhaps the FBI, don't want a public key exchange standard. Why? Because if you and I can change our keys real rapidly, so can the Ayatollah and Qaddafi and all those guys. They don't mind signatures so much, because they're not in the business of forging documents at NSA, but they are in the business of listening in on communications, so it was pretty clear that a signature-only standard, which they tried to put out, was to prevent enhanced privacy. The question at the conference was, 'What would the interest of the law enforcement community be in DSS?' and the answer was quite revealing. The interests of the law enforcement and national security communities—the representative broadened it—was to have a signature-only standard."

History indicates to Hellman that this approach is problematic. "The law enforcement community has some legitimate interests in wiretapping, and when it's carefully controlled by the courts, I think it is a good balance between privacy and the chaos

Super Discount Computer Store

HEWLETT PACKARD

HP DESK JET 500/550C
W/Cable

HEWLETT PACKARD

$359/659

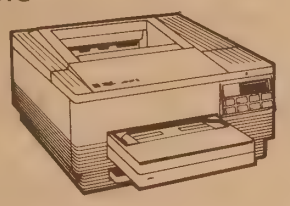
HP LASER JET IIP PLUS
W/Toner & Cable

HEWLETT PACKARD

$739

HP LASER JET IIIP
W/Toner & Cable

HEWLETT PACKARD



$889

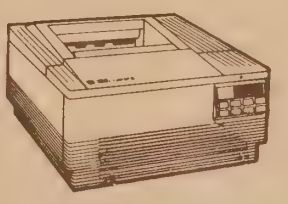
HP LASER JET 4

HEWLETT PACKARD

- TRUE 600 DPI
- 45 Scalable Typefaces
- 2 MB Memory
- 2 Paper Trays

$1329

CALL FOR LASER JET 4M



MEMORY UPGRADES

2MB For Laser Jet III, IIIP & IIP $99

LOCAL BUS SYSTEM 486-33 / 486-50

- Intel 486 Microprocessor
- Built-In Math CoProcessor
- 4MB RAM
- 5 1/4" & 3 1/2" Floppy
- 213MB Hard Drive
- TISeng ET-4000 SVGA Card
- SVGA Color Monitor

$1695/1895

DTK COMPUTERS

NOTEBOOK 386SX-33
- 80MB Hard Drive
- 2MB RAM
- 3 1/2" Floppy
- SVGA Screen
- 6 lbs.

$1095

MULTIMEDIA 386-40MHz
- 125MB Hard Drive
- 5 1/4" or 3 1/2" Floppy
- SVGA Color Monitor
- Trident SVGA Card
- 4MB RAM
- CD ROM
- Sound Blaster Pro
- Mouse

$1559

386 40MHz
- 125 MB Hard Disk
- 5 1/4" & 3 1/2" Floppy
- Trident SVGA Card
- SVGA Color Monitor
- 4MB RAM
- 101 Keyboard
- 64K Cache

$1095

486 33MHz
- 125MB Hard Disk
- 5 1/4" & 3 1/2" Floppy
- Trident SVGA Card
- SVGA Color Monitor
- 4MB RAM
- 101 Keyboard
- FCC/Novell Approved

$1395

486 50MHz
- 125MB Hard Disk
- 5 1/4" & 3 1/2" Floppy
- Trident SVGA Card
- SVGA Color Monitor
- 4MB RAM
- 101 Keyboard
- FCC/Novell Approved

$1595

NOVELL

Authorized Dealer
- Networking
- Consulting
- Support

PACIFICO COMPUTERS

WEST L.A.
11540 Santa Monica Blvd.
VALLEY
13907 Ventura Blvd. #103
OPEN 10-6 MON. THRU SAT.

310/478-2522
818/788-4193

Prices subject to change without notice

of having criminals running around wild. Certainly the greater use of encryption is going to hurt the law enforcement community, because drug dealers will be using cellular telephones and radios and even more sophisticated electronic mail systems over time.

"I would like nothing better than to have a cryptographic system where, by waving a magic wand, we could make sure that drug dealers couldn't have privacy and everybody else could. But you just can't do that.

"And there's a problem with defining who is a drug dealer, who is a possible spy. For example, during the Nixon era, there are reports which are quite believable that the definition of 'Communist spy' or 'suspected Communist spy' was enlarged to include antiwar protesters during the Vietnam war.

"So I'm very concerned about weakening cryptography to help law enforcement or national security concerns. I remember Watergate all too well.

"The FBI says we just need to maintain the status quo. Well, the status quo as it is in 1980, let's say, or the status quo as it was in 1880, when they couldn't do any of this wiretapping? Technology gave them a tremendous source of information with court orders, which may be drying up now, but I don't think they're going to be able to stop the growth of technology here, and if they do it's going to be with great detriment to other people."

RSA's Bidzos adds: "Taking the very long view, the FBI's arguments sound to me like arguments they might have made back in the '20s and '30s—'We really can't build this interstate highway system—do you have any idea what kind of crime this will facilitate? Do you realize people will transport stolen goods across state lines if we build these interstates?' Well, yes, but, you're missing the big picture—and I think that's what's happening here."

A parallel issue revolves around export controls on robust encryption. Currently, for example, the version of Lotus Notes that's sold in the US contains far stronger encryption than the one that's allowed to be sold overseas. The computer and communications industries would like to see these controls disappear because more and more of their foreign customers are demanding strong security features, but so far little progress has been made along that line.

Bidzos thinks he understands why. "I used to say, 'Export controls are stupid because they don't accomplish what they're supposed to accomplish.' If somebody were to say that to me today, I'd say, 'Oh. Pray tell, what were they supposed to accomplish?'

"They are not trying to control this technology, because if that's what they're trying to do, they've failed. What they're trying to do is achieve some objective the government has. I suspect I know what that objective is—it's not as obvious as one may think.

"Is the proliferation of free crypto software a big threat to NSA's ability to snoop? I don't think that's really very much of a threat. I think what they're really afraid of is something very different.

"Let's look at a community of people that uses cryptography. There's tons of software out there, and it's not just recent. Does it look like more and more people have been using it lately? I don't know about that.

"A guy came into my office about two years ago and said, 'Gee, Bidzos, this is kind of interesting, you're working with all these desktop computer guys. Let me ask you something—if you take all the mailboxes that you provide secure email for, what do you get? A million? Could it be five million? Well, let me tell you something. Last year alone in this country, ten million fax machines were sold. And of course, for telephones it's much, much larger.' There's some outrageously large number of faxes sent over the Atlantic every day. Very few of them are secure.

"What I think the government's trying to do is collect intelligence. Their job isn't really as simple as just collecting everything that moves; their job is finding needles in the haystack. They have to target people, they're looking for something that's specific. That's the needle. And if you picture black lines on a map going over the Atlantic as encrypted traffic, that's the haystack.

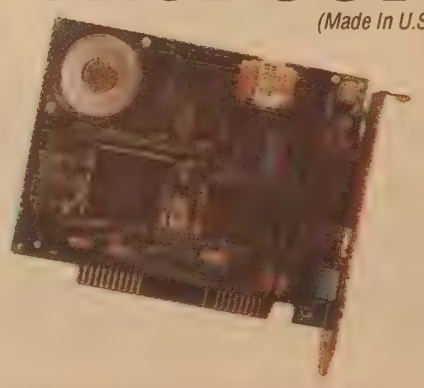
"So if you have a few hundred or a few thousand or even a few tens of thousands of people sending little email messages back and forth, you know the email address, you know where they're going, so who cares? If there's something there that you're interested in, you zero in on it and you go get it. That doesn't make the haystack so big that your mission of finding the needles becomes impossible. If you had every telephone call and every fax machine sending encrypted data over the Atlantic, the haystack now becomes so large that your job of find-

continued on page 164

"Every week, half a million trees get cut down to make Sunday newspapers that end up in the trash."*

RECYCLE
your copy of
MICROTIMES
*Source: 1991-Take It Back Foundation, Inc.

CALCOM PRODUCTS
(Made In U.S.A.)



DEALERS & DISTRIBUTORS INQUIRIES WELCOME

WORLD'S FASTEST FAX MODEM!
ONLY
V.32bis/14,400bps
FULLY FEATURED
HIGH SPEED
DATA/FAX MODEM
$195
CALL TODAY 800/546-9222

FEATURES:
- V.32bis/V.42bis DATA/FAX PC HALF CARD MODEM
- 14,400bps DATA/FAX CONNECTION SPEED W/AUTO FALLBACK
- V.42bis/MNP5, V.42/MNP2-4 DATA COMPRESSION & ERROR CORRECTION (EFFECTIVE THROUGHPUT UP TO 57.6Kbps)
- ENHANCED HAYES AT COMMAND SET & CLASS 2 FAX COMMAND
- DATA/FAX COMMUNICATIONS SOFTWARE PACKAGE INCLUDED

OTHER SPECIALS:
9624F 9600bps SEND & RECEIVE FAX W/2400 DATA...$49
2400B 2400bps DATA MODEM...$29

Networks To Go...

Networks are our only business!

Ready To Network?

"Here's some reasons to do it NOW!"

- **Increase** your daily productivity...
- **Centralize...** share your data from one location, the *file server!*
- **Automated** tape backup of your *centralized* data on a daily basis...
- **Expandable..** as you grow so can your network!

Why Netfocus Network Stores?

1. Excellent lease-purchase plans available
2. Novell Authorized Reseller
3. Certified NetWare Engineers on staff
4. Your network is delivered 'Plug & play!'
5. We're just a phone call away if you need us

And most of all... *we care!*

Microsoft

Windows* for Workgroups...

$399.

"Peer to Peer Networking at its best!"

2 User Starter Kit

Everything you need to connect up 2 computers. Share printers and files. Built-in E-mail and Schedule+ appointment scheduler...

You get:

- 2 Window for Workgroups software packages
- 2 16 bit EtherNet Network Adapters (Novell certified)
- 2 50 ohm cable terminators
- 2 cable T-connectors
- 25' EtherNet coaxial cable with connectors

Live 2 station demo in our showroom!

*"**Netfocus Bonus Features...** With our starter kit you also receive a **speaker driver.** It uses your computer speaker for all Workgroups sound functions... no sound board needed! you also receive our **6 page setup hints pamphlet** we wrote to help you install Windows for Workgroups **better** than Microsoft!"*

Netfocus Network Stores is *your* one-stop source for networking needs...

Network Adapters...

10Base-T NDIS compliant

16 bit Katron NE2000 compatible — **$115**
Novell Labs Tested & Approved. On-board 16k RAM buffer, remote boot PROM socket, 4 LED indicators, Available I/O ports: 200, 220, 240, 260, 300, 320,340,360. IRQs: 2,3,5,10,11,12. Use NE2000 driver or included Katron driver.

EtherNet NDIS compliant

8 bit Katron NE1000 compatible — **$95**
On-board 8k RAM buffer, remote boot PROM socket, uses NE1000 driver. Available I/O ports: 300,320,340,360. IRQs: 2,3,4,5. **T-connector included.**

16 bit Katron NE2000 compatible — **$105**
Novell Labs Tested & Approved. On-board 16k remote boot PROM socket. Available I/O ports: 200,220,240,260,300,320,340,360. IRQs: 2, 3, 4, 5, 10, 11, 12. Use NE2000 driver or Katron driver. **T-connector included.**

16 bit EtherNet boot PROM chip — **$18**

ArcNet

8 bit Katron ArcNet Star (BNC) — **$48**
Remote boot PROM socket, LED activity indicators & node ID switch on rear bracket. Available **I/Os**: 260, 290, 2E0, 2F0, 300, 350, 380, 3E0. **IRQs**: 2, 3, 4, 5,7. Uses standard RXNET driver.

16 bit Katron ArcNet Star (BNC) — **$68**
Remote boot PROM socket, LED activity indicators & node ID switch on rear bracket. Available **I/Os**: 260, 290, 2E0, 2F0, 300, 350, 380, 3E0. **IRQs**: 2, 3, 4, 5,10,11,12. Uses standard RXNET driver.

16 bit Katron ArcNet Star/Bus/**Twisted Pair** — **$78**
Combo adapter. Twisted pair jacks **and** BNC connector. Use the BNC for star or Bus mode. LED activity indicators, remote boot PROM socket. Node ID switch on rear bracket. Available **I/Os**: 260, 290, 2E0, 2F0, 300, 350,380,3E0. **IRQs**: 2, 3, 4,5,10,11,12. **Use RXNET driver or included Katron driver.**

Workstation Cables...

10Base-T **Unshielded Twisted Pair**

7' with RJ45 connectors	$4.50
14' with RJ45 connectors	$7
25' with RJ45 connectors	$10
50' with RJ45 connectors	$18
100' with RJ45 connectors	$25

EtherNet **RG58 A/u coaxial**

25' with BNC connectors	$14
50' with BNC connectors	$21
100' with BNC connectors	$35

ArcNet **RG62 A/u coaxial**

25' with BNC connectors	$14
50' with BNC connectors	$21
100' with BNC connectors	$35

Terminators...

50 ohm EtherNet	$3
93 ohm ArcNet	$3

Miscellaneous...

T-connectors	$2.50
Barrel connectors	$2

Visa and MasterCard accepted

Hubs & Concentrators...

10Base-T

8 port Katron concentrator — **$345**
Complies with IEEE 802.3 EtherNet standard. 1 BNC port and 1 dedicated cascade port. Desktop or wall mountable. **Internal** power supply.

12 port Katron concentrator — **$595**
Complies with IEEE 802.3 standard. 1 BNC & AUI port. Link integrity and status LEDs on each port. **Internal** power supply with fan.

4 port D-Link Network Adapter/Hub — **$350**
Combo 16 bit 10Base-T network adapter and 4 port distribution hub on adapter bracket. Use in small non-dedicated server network or in a workstation to supply 4 additional connections.

ArcNet

Katron 8 port Hub, coaxial — **$130**
Internal power supply. 8 active ports and 1 dedicated cascading port. Activity LEDs on each port.

Addtron 8 port Hub, twisted pair — **$162**
Internal power supply. 8 active ports and 1 dedicated cascading port. Activity LEDs on each port.

4 port passive Hub — **$10**
BNC connections. Moisture sealed.

All items work fine with Novell NetWare, and are warranted for one full year.

(P.S. Clip and save this AD, you may need it some day...)

Novell Authorized Reseller

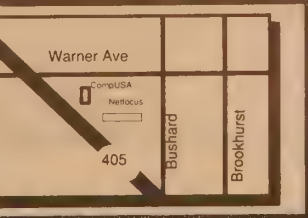
NETFOCUS. *"Your Networking Partners"*

Network Stores...

Mon - Sat 9:00 to 6:00

714-962-1311

9430-L Warner Ave. Fountain Valley
next to "COMP*USA*"



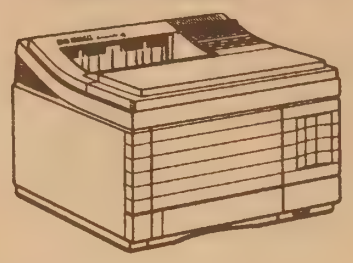
MICRO CITY SM

COMPUTER SUPERSTORE

HEWLETT PACKARD

Authorized Dealer

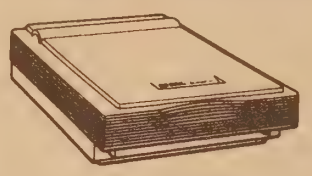
LASERJET 4



- 600 dpi print quality at a 300 dpi price

$CALL

SCANJET IIC SCANNER w/ IBM INTERFACE



- 256 Grayscale or 24 bit color
- High 400 dpi resolution
- One - Pass scanning
- Automatic exposure selections

$1319.00

HP DESKWRITER

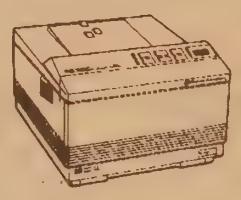
$50 Rebate through Apr. '93

- Perfect for your Macintoah
- 300 dpi quality
- Built-in fonts
- Apple Talk with DeskWriter

SPECIAL

Buy a Laserjet IIIP & receive a 1MB Pacific Data Memory Card for ONLY $69.00

LASERJET IIIP

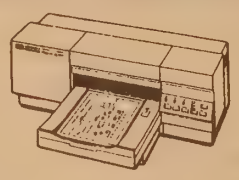


- 300 dpi
- HP III printer features
- PCL 5 Scalable typesets
- Small business printer

$919.00

Come In, Demo the Laserjet IIIP and enter our drawing to win a free copy of HP Dashboard

HP PaintJet XL-300 Color Printer



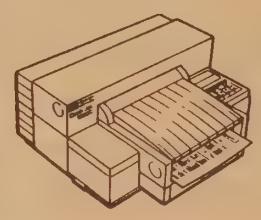
- 300 dpi
- Up to 16.8 million richly laser quality color
- Laser quality text w/scalable typeface
- Ideal for business, CAD, DTP & Graphic art application

SCANJET *IIP* SCANNER w/ INTERFACE

- High-quality finished
- Documents, presentation etc.
- Full-page scan
- 8 bit grayscale
- Image editor

$799.00

HP DESKJET 550C

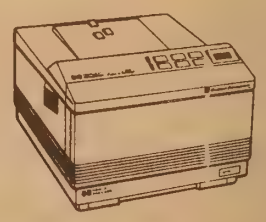


NEW

- 300-dpi, laser-quality black and color printing

$689.00

LASERJET IIP PLUS



- 300 dpi text, graphics
- Compact desktop size
- Prints 4-PPM

$749.00

***All HP Advertised prices reflect 2% cash discount**

***Ask about Micro City Revolving Credit Plan**

CERRITOS
17707 VALLEY VIEW
(714) 739-0444
VALLEY VIEW & ARTESIA
M-F 9:00-5:30

SANTA ANA
1510 S. LYON ST.
(714) 543-4922
LYON & EDINGER
M-F 9:00-6:00
Sat 10:00-5:00

VAN NUYS
6265 SEPULVEDA BLVD.
#15
(818) 781-0698
NEXT TO ROGERSOUND
M-F 9:00-6:00
Sat 10:00-5:00

SAN JUAN CAPISTRANO
33959 DOHENY PARK RD.,
#B
(714) 489-0226
IN PRICE CLUB PLAZA
M-F 9:00-6:00
Sat 10:00-5:00

SAN DIEGO *
3365 ROSECRANS ST., #C
LOMA SQUARE
(619) 523-0510
M-F 9:00-6:00
Sat 10:00-5:00

SAN DIEGO *
9370 WAPLES ST.,
MIRA MESA
(619) 552-9355
M-F 9:00-6:00
Sat 10:00-5:00

* In San Diego, Prices good with AD only!

• Stock may not be avaliable in some stores. • Master Card, VISA accepted. • Prices good thru Mar. 31, 1993 • Prices subject to change without notice.

MICRO CITY℠

COMPUTER SUPERSTORE

Authorized Reseller

BRAND NEW!

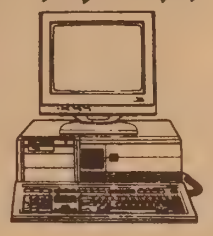
Apple Macintosh CENTRIS 610

- 20 MHz 68040 processor
- 4MB of RAM(Exp. to 68)
- Optional On-board ethernet and internal CD-ROM drive
- 80MB hard drive (Exp. to 500MB)
- Power to handle sophisticated graphics and multimedia applications.

VL LOCAL BUS!

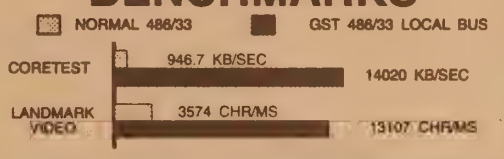
GST 486 33MHZ VESA LOCAL BUS

BLAZING PERFORMANCE



- 4MB RAM
- 1.2M Floppy Drive
- 200MB Hard Drive
- 2 Serial/Parallel ports
- VL cache IDE controller
- SVGA Monitor
- VL Local Bus Graphics
- 101 Enhanced Keyboard

BENCHMARKS



WHY SETTLE FOR LESS?! VESA LOCAL BUS TAPS DIRECTLY INTO THE POWER OF YOUR CPU!

MONTHLY SPECIAL

SONY

Internal CD-ROM Drive bundled w/3 CD titles

$375.00

OKIDATA

OL 400 Laser Printer

$599.00

SPECIAL BUY

Sound Blaster Pro (OEM)

$149.00

NEW

MOUSE

Genuine Microsoft Mouse

$29.00

SMART ONE

96/72/48/24 bps Send/Receive FAX/Modem

$59.00

TOSHIBA

In touch with Tommorow

-SPECIAL-

FREE CARRYING CASE WITH THE PURCHASE OF ANY TOSHIBA NOTEBOOK COMPUTER.

Excludes 4400C

Satellite T1800/80

- 386SX-20MHZ
- 2MB RAM Exp. to 10MB
- 80MB HDD
- Mono STN-LCD up to 64 Gray Scale

T4400C/120

- 486SX-25MHZ CPU
- Upgradable to i486DX-25
- Super VGA Color
- 8KB Cache in CPU
- 4MB RAM Exp. to 12MB

T3300SL/120

- 25MHZ I386 SL CPU
- 2MB RAM Exp. to 8MB
- 80MB HDD
- VGA 9.5" Diag. Screen

T1850C

- 25MH; 386SX CPU
- 4MB RAM
- 256 Color ULTRA-STN-LCD 9.5" display
- 80MB or 120MB hard drive

Need A Quote, But don't have time to stop by? Fax it in, and we will fax you back a quote!

NAME _____

ADDRESS _____

FAX# _____

PH# _____

PRODUCT REQUIRED _____

_____

FAX #

VAN NUYS	CERRITOS	SANTA ANA	SAN JUAN CAPISTRANO
(818)781-4203	(714)739-8291	(714)543-6349	(714)489-0591

NO PAYMENTS OR INTEREST FOR 90 DAYS WHEN YOU OPEN A MICRO CITY CHARGE!

SERVICE CENTER

Open 6 Days a Week!

Each Micro City location is staffed by factory trained techniciens to assist you in your repair and technical needs !

- Stock may not be avaliable in some stores. • Master Card, VISA accepted. • Prices good thru Mar. 31, 1993 • Prices subject to change without notice.

Computer Spies

The Lessons Of Borland Vs. Symantec

BY MITCHELL KAPOR

Can a company lawfully eavesdrop on its employees' telephone calls? Not if they have an expectation of privacy. But, at least in most states, the employer can monitor conversations if it tells the workers that that's what it's going to do.

That old legal issue surfaces in a new technological context in Silicon Valley, with disturbing consequences for your ability to defend key information assets. Take a look at how Borland International, a company that should know better after almost a decade on the leading edge of technology, may have hurt itself in a case involving an apparent theft of trade secrets.

The allegations in the tangled legal affair are by now well known. On September 1, 1992, Eugene Wang, a vice president of Borland's computer languages division, abruptly jumped ship to join competitor Symantec Corp.

A pattern of suspicious behavior in Wang's final days suggested that perhaps he had traded Borland secrets along with his job. Borland had no proof, but it knew where to look. Borland executives opened Wang's MCI Mail account, where they found, they said, a number of messages that they believe prove Wang delivered Borland product plans, memos and other sensitive documents to Symantec. The evidence thus uncovered led to police searches of Wang's and Symantec Chief Executive Gordon Eubanks' homes and Symantec offices, to a pending criminal investigation of Wang and Eubanks and to a civil suit by Borland against Symantec.

What has been scarcely addressed in newspaper coverage of these events is what this case means to the rapidly growing business of electronic mail.

Copyright ©1993 by Mitchell KaporThis article originally appeared in the November 9, 1992 issue of Forbes, *and is reprinted with the permission of the author.*

THE ECPA

Let's back up and consider the law that protects electronic mail users, the federal Electronic Communications Privacy Act of 1986. The privacy act protects messages while in transmission on a public mail service such as MCI, as well as after messages are received and stored on that service.

Borland and its attorneys, in a hurry to prove their suspicions about Wang, justified their intrusion into the mailbox as a property right: Borland was paying the bills for Wang's MCI account. "Email is like an in-box on someone's desk," says Borland spokesman Steven Grady in defense of the search. "When they leave, it reverts to the corporation."

Case closed? Not quite. Borland's metaphors fall apart when tested against the realities of electronic mail. Unlike in-boxes on an abandoned desk, email requires a password, and it can be administered by a wholly separate communications company, like MCI. As it stands, in a criminal case Wang could challenge the legality of all the evidence collected on the basis of the messages found in his MCI account. He may also have grounds for a countersuit under the electronic privacy act and California law, which goes further in protecting individual privacy.

It's easy to understand the anger Borland executives felt in discovering an apparent information hemorrhage. But the methods employed by Borland, which likes to flaunt its "barbarian" ways, may have been a little too barbarian by the standards of the federal statute. The one thing for sure is that all parties will be involved in a lengthy and expensive court battle to sort this out. The final result may be a draw between Borland and Symantec, and a new definition of privacy for the rest of corporate America.

continued on page 74

As it stands, in a criminal case Wang could challenge the legality of all the evidence collected on the basis of the messages found in his MCI account.

LOW PRICED & QUALITY YOU CAN TRUST

HARD DRIVES

SEAGATE 351 A/X (40MB)	$139
SEAGATE 3144 (130MB)	$245
MAXTOR 7120 (130MB)	$245
MAXTOR 7213 (213MB)	$345
MAXTOR 340A (340MB)	$560
MAXTOR 1.2GB	$1499
CONNER (40MB,80MB,120MB)	CALL
QUANTUM (105MB, 120MB, 240MB)	CALL

TRANSPORTABLE HARD DRIVE

130+ MB Capacity Parallel Interface Under 2 lbs.
Size: 1.5"x5"x5" Built-in Battery **$179**

CD ROM DRIVE

MITSUMI CD ROM + KIT	$229
SONY CD	$399
CD ROM SOFTWARE	CALL

SYSTEMS

PRISM 386SX-33

- 386SX-33 Motherboard
- AMI BIOS
- 2MB RAM
- 1.2 & 1.44 Floppy Drives
- 40MB Hard Drive
- 2S/1P/1G
- SVGA Monitor
- Mini Tower Case w/ 200W PS
- 101 Enhanced Keyboard

$699 OR $45/MO

PRISM 386DX-40

- 386DX-40 Motherboard
- AMI BIOS
- 2MB RAM
- 1.2 & 1.44 Floppy Drives
- 40MB Hard Drive
- 2S/1P/1G
- SVGA Monitor
- Mini Tower Case w/ 200W PS
- 101 Enhanced Keyboard

$799 OR $45/MO

PRISM 486-33

- 486-33 Motherboard AMI BIOS
- 4MB RAM
- 1.2 & 1.44 Floppy Drives
- 120MB Hard Drive
- 2S/1P/1G
- SVGA Monitor
- SVGA (1MB) Card
- Mini Tower Case w/ 200W PS
- 101 Enhanced Keyboard
- Cyrix Processor

$1250 OR $30/MO

PRISM 486DX-33 VESA LOCAL BUS

- 486-33 Motherboard
- AMI BIOS
- 4MB RAM
- 1.2 & 1.44 Floppy Drives
- 120MB Hard Drive
- 2S/1P/1G
- SVGA Monitor
- 32 Bit Local Bus Card
- Mini Tower Case w/ 200W PS
- 101 Enhanced Keyboard

$1395 OR $49/MO

PRISM 486DX-50

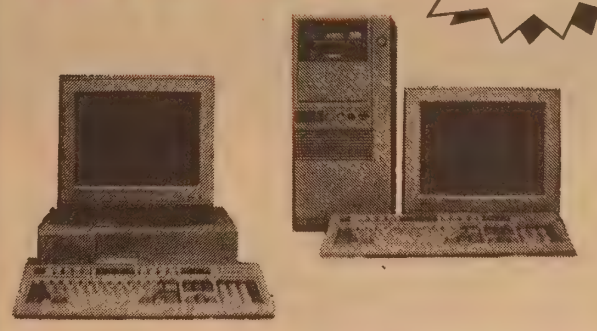
- 256K Cache
- AMI BIOS
- 4MB RAM
- 1.2 & 1.44 Floppy Drives
- 130MB Hard Drive
- 2S/1P/1G
- SVGA Monitor
- Full Tower Case w/ 250W PS
- 101 Enhanced Keyboard

$1595 OR $55/MO

We Will Beat Any Advertised Price!

OVER 10,000 SYSTEMS SOLD

SINCE 1983



LOW PRICED NOTEBOOKS

DESCRIPTION	80MB	120MB	200MB
NP925 (386SXL-25)2MB RAM	$1199	$1350	$1499
NP933 (386DXL-33)4MB RAM	$1350	$1450	$1650
NP942 (486SLC-25)4MB RAM	$1399	$1499	$1699
NP943 (486DX-33)4MB RAM	$1780	$1899	$2099
NP943C (486DX-33)4MB RAM COLOR	$2499	$2599	$2699
NP209 (486DX2-50)4MB RAM	$1990	$2095	$2195

MULTIMEDIA SYSTEM

386DX-40 MHz

- 2MB RAM
- 130MB Hard Drive
- 1.2 & 1.44 Floppy Drives
- 64K Cache
- Mitsumi CD ROM Drive
- SVGA Card
- SVGA Monitor
- SOUND BLASTER PRO
- Mini Tower Case
- 6 CD Titles

$1499 OR $47/MO

TAPE BACK-UP

COLORADO 120MB	$179
EDISON 250MB	$225
ARCHIVE 250MB	$225

MOTHERBOARDS

486DLC-33 MHz w/CPU	$355
486DX-33 MHz w/CPU	$495
486DX-50 MHz w/CPU	$599
386DX-40 MHz w/CPU	$175
386SX-25 MHz w/CPU	$110
386SX-40 MHz w/CPU	$130
286-20 MHz w/CPU	$75

MONITORS

EDISON SVGA .28	$245
EDISON SVGA .39	$210
EDISON SVGA .28 (Non-int)	$295
VIEWSONIC	CALL
SONY	CALL

FINANCING AVAILABLE!
Buy now, pay after 3 months.
(Subject to credit approval)

LASER PRINTERS

Best Buy! OKIDATA OL400*

- PC Magazine® Editors Choice
- 4ppm, 300dpi page printer, publication quality output
- 17 fonts included, more standard typefaces than LaserJet™ IIP
- 200-sheet paper tray
- HP® Series II compatible
- 5 year print head warranty

with Toner **$569 OR $20/MO**

NEW! OKIDATA OL830*

- Adobe Postscript®
- 8ppm for high productivity page printer
- 17 scalable fonts
- 2MB memory for full page graphics

with Toner **$1250 OR $40/MO**

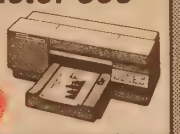
NEW! OKIDATA OL810*

- 8ppm page printer
- 300 x 1200dpi
- PCL5
- 42 fonts

with Toner **$1050**

* Laser Printer Class

WIN PRINT Laser Master 800



- 800 x 800dpi
- 64 font
- Postscript
- PCL4

$1350

SCANNERS

MICROTEK SCANNER SCANMAKER II	SCANMAKER IIXE
• Full Page Color Scanner	• Full Page Color Scanner
• 600 x 600 dpi **$895**	• 800 x 800 dpi **$1095**

WIN JET 800/1200

- 800 x 800dpi/1200dpi
- 4 Script Language
- Interface Card
- Support HP II, IID, III, IIID, IV

$650/$750

MAKE YOUR HP PRINTER 800 x 800 dpi!

LASER PRINTER MEMORY

MAKE	MODEL	1MB	2MB	4MB
EPSON	EPL-6000		$130	210
	EPL-7000	$114	133	
	ACTION LASER II	114		
HP	III-IIID, IIIP, IIP/IIP+	90	125	190
	II/IID (1,2,4MB)	95	140	214
	DeskJet-500, 500C	(256K)110		
	IIsi	100		
OKIDATA	400	95	114	
	800	95	155	214
	830		164	
PANASONIC	4410, 4430	120	160	214
	4420, 4450I	110	130	200
	4450	123		
	4455		150	

NEW FOR 1993!
MICROTEK SCANNER ScanMaker II
- Full Page Color Scanner
- 600 DPI

$895

MICRO AMERICA, INC.

266 Viking Ave., Brea, California 92621
(714) 256-0695 Fax (714) 256-1546

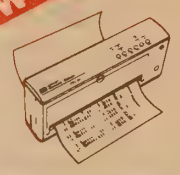
NEW FOR 1993!
VGA COLOR MONITOR IBM 8513

$159

Ti-m-m-b-b-er! Cedar

HEWLETT-PACKARD DESKJET PRINTERS [AFFORDABLE LASER QUALITY BLACK, WHITE & COLOR OUTPUT TO FIT ANY NEED]

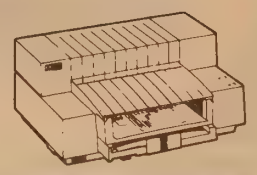
NEW!



HP DeskJet Portable Printer

Portable laser-quality black
- 300-dpi, laser quality printing
- Small, light, only 4.4lb (2kg)
- 3 pages per minute print speed
- Prints up to 100 pages per battery
- Built in fonts

$369

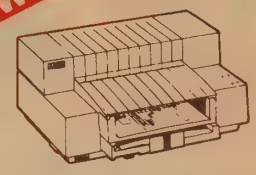


HP DeskJet 500 Printer

Affordable laser-quality black
- Affordable 300-dpi, laser-quality printing
- Wide variety of built-in fonts
- Supports leading software applications including Windows 3.0

$369

NEW!

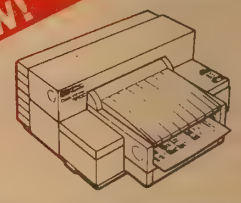


HP DeskJet 500C Printer

Affordable laser-quality black or color
- B & W or color 300-dpi, laser-quality printing
- Scalable fonts
- Letter/legal size paper
- Most affordable color printer

$479

NEW!



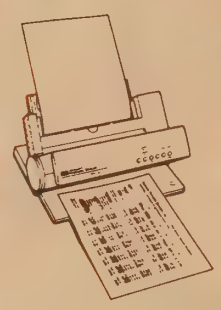
HP DeskJet 550C Printer

Laser-quality black and convenient color
- B & W or color laser-quality printing
- Scalable fonts
- Letter/legal size paper
- Advanced features

$679

All DeskJet Printers listed carry a 3-year limited warranty

Optional Cut-Sheet feeder! ONLY...



$78

HP DeskWriter Printer [For Apple Macintosh]

Affordable laser-quality black
- Designed exclusively for the Macintosh
- Affordable 300-dpi, laser-quality printing
- Variety of fonts in unlimited sizes
- Personal desktop convenience

$369

HP DeskWriter C Printer [For Apple Macintosh]

Affordable laser-quality black or color
- B & W or color 300-dpi, laser-quality printing
- Scalable fonts
- Letter/legal size paper
- Most affordable color printer

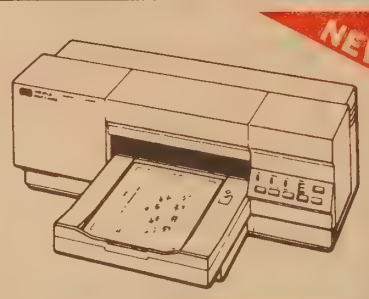
$479

HP DeskWriter 550 C Printer [For Apple Macintosh]

Laser-quality black and convenient color
- B & W or color laser-quality printing
- Scalable fonts
- Letter/legal size paper
- Advanced features

$679

NEW!



HP PaintJet XL 300 Color Printer

PROFESSIONAL 11"X 17" HP COLOR!

HP PaintJet XL 300 Color Printer

Laser-quality color plus connectivity
- Laser-quality 300-dpi color out put
- HP LaserJet-compatible
- Optional Adobe PostScript Level 2
- Fits easily into your current networks
- Plain-paper printing, plus HP transparency film and new glossy paper
- Pantone approved color matching
- Prints on MS-DOS, Windows, and Mac
- Full network capabilities (with options)
- A/B size media

$3085 [MAC]
OR
$2185 [PC]

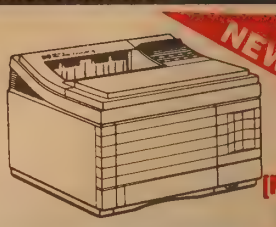
NEW! HP'S 600 DPI LASERJET 4 SERIES PRINTERS!

LaserJet 4

Cedar has your new LaserJet in Stock for Immediate Delivery!

CALL TODAY FOR YOUR SPECIAL CEDAR PRICE!

NEW!



HP LaserJet 4 Printer

True 600-dpi, REt, enhanced HP PCL 5
- True 600 X 600-dpi quality at a 300-dpi price
- Resolution Enhancement technology and Microfine toner
- 2 MB RAM
- Fast 8-ppm printing for complex documents
- (Mac/PC) language and platform flexibility
- Ideal for Windows environment
- Type library with 45 scalable typefaces
- Improved paper handling
- Software drivers are built in
- Full network capabilities (with options)

HP LaserJet 4M Printer [MAC] OR [PC]

True 600-dpi, REt, enhanced HP PCL 5, Adobe Postscript
- True 600 X 600-dpi quality at a 300-dpi price
- Resolution Enhancement technology and Microfine toner
- Integrated PostScript Level 2 software
- (Mac/PC) language and platform flexibility
- Excellent paper handling
- Fast 8-ppm printing for complex documents
- 6 Mbtes memory standard
- Additional network capabilities (with options)

CALL FOR CEDAR'S $PECIAL PRICE!

. . .Cut Yourself a Deal!

CALL: (310) 782-8210 or (310) 782-3942 to FAX an order.

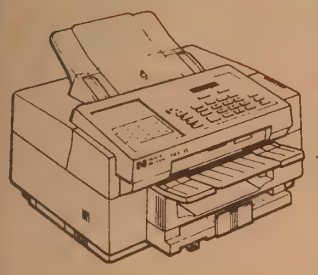
HEWLETT PACKARD
Authorized Dealer

Prices are Falling so ...

HEWLETT-PACKARD FACSIMILE MACHINES

HP FAX to the MAX!

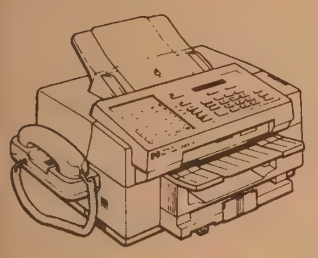
Cedar knows these machines can handle it! We use them everyday! Dark, crisp, readable 300-dpi PLAIN PAPER faxes that use the same ink jet technology as HP's famous DeskJet series printers. **So iron your clothes, not your "curly" faxes when you buy an HP FAX-200 or HP FAX-310!**



HP FAX-200

Affordable plain-paper fax
- Low-cost cut sheet plain-paper faxing
- No more flimsy thermal faxes to copy
- Lower cost per page than a thermal fax
- Better output quality than a thermal fax
- 12 page memory
- 100 sheet paper capacity
- Speed Dialing
- HP Quality and reliability
- One-year warranty

$915



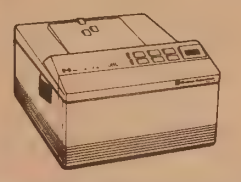
HP FAX-310

Advanced-featured plain-paper fax
- Advanced Features and plain-paper
- No more flimsy thermal faxes to copy
- Lower cost per page than a thermal fax
- Better output quality than a thermal fax
- Delayed/ Speed Dialing
- 28 page memory
- Automatic document reduction
- Confidential mail box
- HP Quality and reliability
- One-year warranty

$150 Rebate!

$1235
-150
$1085

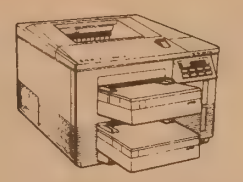
HEWLETT-PACKARD LASERJET PRINTERS



HP LaserJet IIIP Printer

REt*, HP PCL 5, small footprint
- Resolution Enhancement Technology for quality superior to ordinary 300-dpi printers
- PCL 5 allows you to scale type to thousands of sizes
- Prints complex documents faster than other laser printers in its class
- Compact desktop size

$915

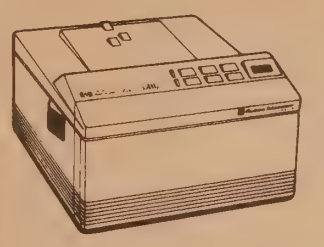


HP LaserJet IIISi Printer

High Speed, Networking, REt, enhanced HP PCL 5
- Resolution Enhancement technology with Microfine Toner for near 600-dpi print quality
- Fast 17-ppm printing
- RISC based formatter for fast throughput
- Two 500-sheet paper trays
- Optional printer interface for leading networks
- Factory installed Postscript option

$3035

HP LaserJet IIIP PostScript Printer [For Apple Macintosh]



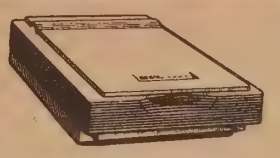
Affordable 300-dpi laser printing, PS Level 2, REt
- Mac version includes AppleTalk
- Resolution Enhancement Technology for quality superior to ordinary 300-dpi printers
- True Adobe PostScript with 35 typefaces
- Mac or PC compatible
- Built in LocalTalk interface
- Compact desktop size
- 250-sheet paper cassette for dual bin printing (optional)

$1349

HEWLETT-PACKARD SCANNERS [GRAYSCALE/FULL COLOR]

Awesome Images!

Ask the people in the know and they will tell you that the HP ScanJets are simply the best!



HP ScanJet IIp Scanner

Affordable 300-dpi grayscale
- 300-dpi
- 8 bit gray scale scanner
- Document Feeder (optional)
- Mac or PC compatible

$795

HP ScanJet IIc Scanner

400-dpi or 800-dpi color and grayscale
- HP's Full Color Scan Solution
- 400-dpi or 800-dpi enhanced resolution
- 4 bit or 8 bit gray scale
- 24 bit color
- 15 seconds per page

$1340

NEW! 600 DPI

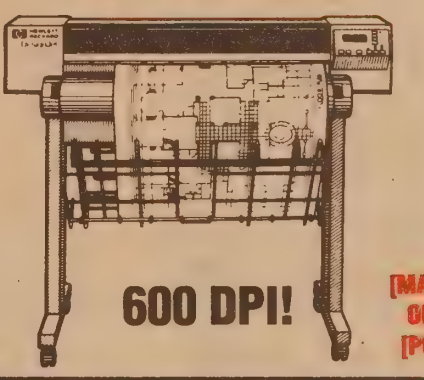
NEW!

HP DesignJet 600 E-Size Plotter

Fast E-Size 600-dpi quality black
- A-E , 24 & 36 inch rolls
- RS-232-C & parallel interface
- Monochrome inkjet technology
- Enhanced version
- HP JetDirect Card for Unix (optional)
- HPGL emulation
- New AutoCad driver Rel. 10 & 11

$5497

HP DesignJet 600 E-Size Plotter



600 DPI!

[MAC] OR [PC]

**Prices listed reflect the cash price only.*

*HP offer good thru Feb. 28, 1993

CEDAR

COMPUTER CENTER, INC.

326 Maple Avenue, Torrance, CA

PH #: (310) 782-8210 FAX: (310) 782-3942

NEW TECHNOLOGIES
Your Brand Name Center

WE ONLY GIVE YOU VESA Standard LOCAL BUS

New Technologies now gives you VESA Standard Local Bus. We provide industry standard systems with flicker-free graphics, ultra hi-speed and a multitude of colors. The best part of the new VLB system is that it eliminates the bottleneck while virtually guaranteeing that your system will not be rendered obsolete!

- 256K Cache
- 4MB RAM
- 1.2MB & 1.44MB Drive
- 175MB 15ms Hard Drive
- Genoa 32 Bit VL-Bus Graphic
- Accelerator w/1MB RAM
- 14" SuperVGA Color Monitor (72Hz Refresh Rate)
- 2 Serial, 1 Parallel, 1 Game
- Enhanced 101 Keyboard
- Hi-Res Mouse
- MS-DOS 5.0

33MHz 486DX
$1695 /$49 mo.*

50MHz 486DX
$1945 /$51 mo.*

66MHz 486DX2
$2045 /$53 mo.*

Optional 32 Bit Diamond Stealth VL Bus Graphics Card Available.

NEW

11861 Telegraph Road
Santa Fe Springs, CA
90670
Tel: (310) 948-2060
Fax: (310) 942-0440

461 N. Lake Avenue
Pasadena, CA 91101
Tel: (818) 356-0391
Fax: (818) 356-0068

19230 Colima Road
Rowland Heights, CA
91748
Tel: (818) 965-7004
Fax: (818) 913-6936

630 South Grand Avenue
Suite 101
Santa Ana, CA 92705
Tel: (714) 542-1800
Fax: (714) 542-2182

50/66MHz 486DX2

- 4MB RAM
- 256K Cache Memory
- 1.2MB & 1.44MB Drive
- 175MB 15ms Hard Drive
- 16 Bit SuperVGA w/1MB
- SuperVGA Color Monitor
- 2 Serial, 1 Parallel, 1 Game
- Enhanced 101 Keyboard
- Hi-Res Mouse

$1645/$1845
$47/$48 mo.*

50MHz 486DX

- 4MB RAM
- 256K Cache Memory
- 1.2MB & 1.44MB Drive
- 175MB 15ms Hard Drive
- 16 Bit SuperVGA w/1MB
- Super VGA Color Monitor
- 2 Serial, 1 Parallel, 1 Game
- Enhanced 101 Keyboard
- Hi-Res Mouse

$1745
$50 mo.*

33MHz 486DX

- 4MB RAM
- 64K Cache Memory
- 1.2MB & 1.44MB Drive
- 175MB 15ms Hard Drive
- 16 Bit SuperVGA w/1MB
- SuperVGA Color Monitor
- 2 Serial, 1 Parallel, 1 Game
- Enhanced 101 Keyboard
- Hi-Res Mouse

$1495
$43 mo.*

33MHz 486SX

- 4MB RAM
- 1.2MB & 1.44MB Drive
- 175MB 15ms Hard Drive
- 16 Bit SuperVGA w/1MB
- SuperVGA Color Monitor
- 2 Serial, 1 Parallel, 1 Game
- Enhanced 101 Keyboard
- Hi-Res Mouse

$1325
$38 mo.*

33MHz 486DLC

- 4MB RAM
- 1.2MB & 1.44MB Drive
- 125MB 15ms Hard Drive
- 16 Bit SuperVGA
- SuperVGA Color Monitor
- 2 Serial, 1 Parallel, 1 Game
- Enhanced 101 Keyboard
- Hi-Res Mouse

$1195
$34 mo.*

40MHz 386DX

- 4MB RAM
- 1.2MB & 1.44MB Drive
- 125MB 15ms Hard Drive
- 16 Bit SuperVGA
- SuperVGA Color Monitor
- 2 Serial, 1 Parallel, 1 Game
- Enhanced 101 Keyboard
- Hi-Res Mouse

$1045
$30 mo.*

40MHz 386SX

- 2MB RAM
- 1.2MB & 1.44MB Drive
- 85MB 19ms Hard Drive
- 16 Bit SuperVGA
- SuperVGA Color Monitor
- 2 Serial, 1 Parallel, 1 Game
- Enhanced 101 Keyboard
- Hi-Res Mouse

$895
$29 mo.*

* Subject to credit approval.

NEW TECHNOLOGIES

Your Best Source For Brand Name Components

Monitors

CTX5439A 14" SuperVGA Color Monitor (1024 x 768, .39dp)	$235
CTX5468A 14" SuperVGA (TriScan) Color Monitor (1024 x 768, .28dp)	280
CTX5468NI Non-Interlaced Color Monitor (1024 x 768, .28dp)	295
CTX1461 14" Non-Interlaced Color Monitor (1024 x 768, 72Hz refresh)	345
CTX1560 15" Non-Interlaced Color Monitor (1024 x 768, .28dp)	460
CTX1760 17" Digital Flat Screen Color Monitor (1280 x 1024, .28dp)	825
MAG MX 15H 15" Color Monitor (1280 X 1024, .28DP)	575
MAG MX 17H 17" Color Monitor (1280 x 1024, .28dp)	1055
NEC MultiSync 3FGx 15" Color Monitor (1024 x768, .28dp)	655
NEC MultiSync 4FG 15" Color Monitor (1024 x 768, .28dp)	765
NEC MultiSync 5FG 17" Color Monitor (1280 x 1024, .28dp)	1315
NEC MultiSync 6FG 21" Color Monitor (1280 x 1024, .28dp)	2350
Sony CPD-1304S 14" MultiScan Monitor (Non-Interlaced, .25dp)	598
Sony CPD-1604S 17" MultiScan Monitor (Non-Interlaced, .25dp)	995
ViewSonic 4E 14" SuperVGA Color Monitor (1024 x 768, .28dp)	295
ViewSonic 6 14" Non-Interlaced Color Monitor (1024 x 768, .28dp)	335
ViewSonic 6E 14" Non-Interlaced Color Monitor (1024 x 768, .28dp)	325
ViewSonic 5E 14" Non-Interlaced Color Monitor (1024 x 768, .28dp 72Hz refresh rate @ 1024 x 768)	395
ViewSonic 6FS 15" Multi-Frequency Color Monitor (Flat Screen Low Radiation 1280 x 1024, .28dp, 72Hz refresh rate @ 1024 x 768)	575
ViewSonic 7 17" Multi-Frequency Color Monitor (Digital Auto-Tracking FlatScreen, Low Radiation, 1280 x 1024, .28dp)	995
ViewSonic 8 20" Multi-Frequency Color Monitor (Digital Auto-Tracking, Low Radiation, 1280 x 1024, .31dp)	1550

Motherboards

33MHz 386SX System Board	$113
40MHz 386DX System Board w/64K Cache	172
33MHz 486SX System Board	294
33MHz 486DX System Board w/64K Cache	490
33MHz 486DX System Board w/256K Cache	505
33MHz 486DX System Board EISA w/256K Cache	700
50MHz 486DX/2 System Board w/256K Cache	661
50MHz 486DX System Board w/256K Cache	712
50MHz 486DX System Board EISA w/256K Cache	907
33MHz 486DX System Board VESA Local Bus	538
50MHz 486DX System Board VESA Local Bus	720
66MHz 486DX/2 System Board VESA Local Bus	837
Micronics 25MHz 486SX System Board	380
Micronics 33MHz 486DX System Board	661
Micronics 33MHz 486DX System Board VL Bus	719
Micronics 50MHz 486DX/2 System Board VL Bus	869
Micronics 66MHz 486DX/2 System Board VL Bus	1099
Orchid 33MHz 486DX System Board VESA Local Bus	710
Orchid 50MHz 486DX System Board VESA Local Bus	885
Orchid 66MHz 486DX/2 System Board VESA Local Bus	970

Local Bus Cards

Genoa 1MB VESA Local Bus VGA Adapter	$126
Stealth 1280 VESA Local Bus VGA Adapter	184
Orchid Fahrenheit VESA Local Bus VGA Adapter	195
ATI Mach 32 VL Graphics Card w/1MB	403
Orchid VESA Local Bus Intelligent IDE Controller	64

Printers

Hewlett Packard DeskJet 500 InkJet Printer	$375
Hewlett Packard DeskJet Portable 3ppm	375
Hewlett Packard DeskJet 500C 3ppm/Color	469
Hewlett Packard DeskJet 550C Color InkJet Printer	695
Hewlett Packard LaserJet IIP Plus Laser Printer	749
Hewlett Packard LaserJet IIP Laser Printer	925
Hewlett Packard LaserJet IV Laser Printer	1369
Hewlett Packard LaserJet IV M 8ppm	1926
Hewlett Packard LaserJet IIISi 17ppm	3189
Hewlett Packard LaserJet IIID 8ppm	2389
Panasonic KX-P1123 Printer (24 pin/240cps/80col)	193
Panasonic KX-P1124i Printer (24 pin/300cps/80col)	289
Panasonic KX-P2180 Quiet Printer (9pin/240cps/80col/color option)	178
Panasonic KX-P2123 Quiet Printer (24pin/240cps/80col/color option)	242
Panasonic KX-P2124 Quiet Printer (24pin/320cps/80col/color option)	325
Panasonic KX-P2624 Quiet Printer (24pin/300cps/132col)	398
*** Color Kit for Panasonic KX-P2180, KX-P2123 or KX-P2124	45
Panasonic KX-P4410 Laser Printer (5ppm/512K/300dpi)	625
Panasonic KX-P4430 Laser Printer (5ppm/1MB/300dpi)	895
Okidata OL400P LED Page Printer	598
Okidata OL810 LED Page Printer	1048
Okidata OL830 LED Page Printer	1278
Okidata OL840 PostScript Printer	1598
Okidata ML184	277
Okidata ML380	229
Okidata ML320	319
Okidata ML321	435
Okidata ML391	595
Okidata ML393	959
Okidata ML591	598
Epson FX-850 9pin/264cps, 80col	315
Epson FX-1050 9pin/264cps/136col	385
Epson LX-810 9pin/80col	178
Epson LQ-570 24pin/80col	259
Epson LQ-870 24pin/80col	475
Epson LQ-1070 24pin/136col	375
Epson EPL-8000 10ppm	1125
Epson DFX-5000	1385
Epson DFX-8000	2335
Epson Action Laser 1000	695

Floppy/Hard Drives

TEAC 1.2MB FDD (5.25")	$55
TEAC 1.44MB FDD (3.5") w/Mounting Kit	45
TEAC 2-in-1 1.2/1.44MB FDD	132
TEAC 2.88MB FDD (3.5") w/Mounting Kit	90
Conner CP-3000 40MB IDE HDD (29ms)	162
Conner CP-30084 80MB IDE HDD (17ms)	195
Conner CP-30104 120MB IDE HDD (17ms)	245
Conner CP-30174 170MB IDE HDD (17ms)	276
Conner CP-30204 210MB IDE HDD (12ms, 256K cache buffer)	365
Conner CP-3364 360MB IDE HDD (14ms, 64K cache buffer)	687
Conner CP-3544 520MB IDE HDD (12ms, 256K cache buffer)	890
Conner CP-3540 520MB SCSI IDE HDD (12ms, 256K cache buffer)	890
Maxtor MX-7120A 120MB IDE HDD (15ms)	249
Maxtor MX-7120S 120MB SCSI HDD (15ms)	305
Maxtor MX-7213A 213MB IDE HDD (15ms)	365
Maxtor MX 7213S 213MB SCSI HDD (15ms)	405
Maxtor LXT-340A 340MB IDE HDD (13ms)	580
Maxtor LXT-340S 340MB SCSI HDD (13ms)	590
Maxtor LXT-535A 520MB IDE HDD (13ms)	880
Maxtor LXT-535S 520MB SCSI HDD (13ms)	940
Maxtor XT-8760SH 675MB SCSI HDD (16.5ms)	1195
Maxtor PO-12 1.2GB SCSI HDD (13ms)	1475
Maxtor P1-17S 1.7GB SCSI HDD (13ms)	1675
Quantum ProDrive ELS 42MB IDE HDD (19ms)	155
Quantum ProDrive ELS 85MB IDE HDD (17ms)	200
Quantum ProDrive ELS 127MB IDE HDD (17ms)	260
Quantum ProDrive ELS 170MB IDE HDD (17ms)	290
Colorado Memory System JT-10 120MB Parallel Port Tape Backup	395
Colorado Memory System JT-20 250MB Parallel Port Tape Backup	450
Colorado Memory System DJ-10 120MB Tape Backup	195
Colorado Memory System DJ-20 250MB Tape Backup	245
Colorado Memory System AB-11 External Adapter Kit	39
Colorado Memory System KE-09 External Drive Kit	80
Colorado Memory System FC-10 500Kb/s-1MB/s Adapter Kit	90
Colorado Memory System TC-15 Data Compression Adapter Kit	189
Micropolis 1684 SCSI 340MB	999
Micropolis 1624 SCSI-2 670MB	1129
Micropolis 1598 SCSI-2 1.0 GB	1429
Micropolis 1908 SCSI-2 1.4 GB	1699
Micropolis 1924 SCSI-2 2.2 GB	2583
Media Vision CD-16 Multi-Media System w/Sony 31A CD-ROM	495

IBM Computer Systems

IBM PS Value Point

386SLC-25 No HD, 2MB ISA 1.44 FD SVGA Mouse	$775
386SLC-25 170MB HD, 2MB ISA 1.44 FD SVGA Mouse DOS	999
386SLC-25 80MB HD, 2MB ISA 1.44 FD SVGA Mouse DOS	910
486DX-33 No MB HD, 4MB ISA 1.44 FD SVGA Mouse	1350
486DX-33 120MB HD, 8MB ISA 1.44 FD SVGA Mouse OS/2	1575
486DX-33 212MB HD, 8MB ISA 1.44 FD SVGA Mouse OS/2	1775
486SX-25 No HD, 4MB ISA 1.44 FD SVGA Mouse	980
486SX-25 170MB HD, 8MB ISA 1.44 FD SVGA Mouse OS/2	1400
486SX 25 80MB HD, 8MB ISA 1.44 FD SVGA Mouse OS/2	1200
486DX2-66 212MB HD, 8MB ISA 1.44 FD SVGA Mouse OS/2	2450
6312 14" Multr. .28 1024 x 768 72Hz Round w/ Cable	425
6314 14" Multr. .28 1024 x 768 72Hz Round w/ Cable	525
6319 15" Multr. .28 1024 x 768 72Hz Round w/Cable	650

Compaq Computer Systems

PL 386SX/25Z 40MB HD, 1.44 FD 2MB SVGA ISA SSPM DOS 5.0	$775
PL 386SX/25Z 84MB HD, 1.44 FD 2MB SVGA ISA SSPM DOS WIN MOUSE	875
PL 386SX/25 NO HD, 1.44 FD 2MB SVGA ISA SSPM	725
PL 386SX/25 84MB HD, 1.44 FD 2MB SVGA ISA DOS WIN MOU WPKS	995
PL 386SX/25 120MB HD, 1.44 FD 4MB SVGA ISA 5.25 FD DOS WIN MOUSE	1075
PL 386/25S 84MB HD, 1.44 FD 2MB WIN DOS MOUSE	925
PL 386/25S 120MB HD, 1.44 FD 2MB WIN DOS MOUSE	975

386 LAPTOP

LTE LITE 386SL/25 84MB HD, 1.44 FD 4MB VGA SPM	2335
LTE LITE 386SL/25 120MB HD, 1.44 FD 4MB VGA SPM	2525
CONTURA 386SL/25 120MB HD, 1.44 FD 4MB VGA SPM DOS 5.0	1995
CONTURA 386SL/20 84MB HD, 1.44 FD 2MB VGA SPM DOS 5.0	1450
LTE LITE 386SL/25C 84MB HD, 1.44 FD 4MB VGA SPM DOS 5.0	3275
LTE LITE 386SL/25C 120MB HD, 1.44 FD 4MB VGA SPM DOS 5.0	3550
CONTURA 386/25C 84MB HD, 1.44 FD 4MB DOS WIN TRACKB	2350
CONTURA 386/25C 120MB HD, 1.44 FD 4MB DOS WIN TRACKB	2600
CONTURA 386SL/20 84MB HD, 1.44 FD 2MB DOS WIN TRACKB	1529
CONTURA 386SL/25 84MB HD, 1.44 FD 4MB DOS WIN TRACKB	1795
CONTURA 386/25 120MB HD, 1.44 FD 4MB DOS WIN TRACKB	2075

386 NOTEBOOK

LTE LITE 386SL/25E 84MB HD, 1.44 FD 4MB DOS WIN TRACKB	2795
LTE LITE 386SL/25E 120MB HD, 1.44 FD 4MB DOS WIN TRACKB	2975

486 DESKTOP

PL 486DX2/50 NO HD, 1.44 FD 4MB SVGA ISA	1595
PL 486/25S 240MB HD, 1.44 FD 4MB WIN DOS MOUSE	1395
PL 486/33 240MB HD, 1.44 FD 4MB WIN DOS MOUSE	1795
PL 486/50 120MB HD, 1.44 FD 4MB WIN DOS MOUSE	1850
PL 486/50 120MB HD, 1.44 FD 4MB 5.25 WW WIN DOS MOUSE	1975
PL 486/50 240MB HD, 1.44 FD 4MB WIN DOS MOUSE	1995
PL 486/50 240MB HD, 1.44 FD 4MB 5.25 WW WIN DOS MOUSE	2095

486 NOTEBOOK

LTE LITE 486SL/25C 120MB HD, 1.44 FD 4MB DOS WIN TRACKB	3795
LTE LITE 486SL/25C 209MB HD, 1.44 FD 4MB DOS WIN TRACKB	4095

IBM

COMPAQ

EPSON

OKIDATA

Panasonic Office Automation

HEWLETT PACKARD

new

Multimedia

Sony 31A CD-ROM Drive w/Ctrl $298

Sony CD-ROM Starter Kit w/4 Software Titles $385

Sony CD-ROM System w/7 Software Titles, 16 Bit Sound Board w/Spkr $625

Sony CD-ROM System External w/7 Software Titles, 16 Bit Sound Board w/Spkr $785

Monthly Specials

CTX 1461 14" Non-Interlaced Monitor
14" .28mm Non Glare
1024 x 768 Non-Interlaced
72Hz Refresh Rate $325

CTX 1561 15" Flat Screen Monitor
15" .28mm Non Glare Flat Screen
1024 x 768 Non-Interlaced
72Hz Refresh Rate
Digital Control $415

CTX 1760DF 17" Flat Screen Monitor
17" .28mm Non Glare Flat Screen
1280 x 1024 Non-Interlaced
72Hz Refresh Rate
Digital Control $775

Upgrades

Upgrade to a 386 or 486:

40MHz 386DX w/Instal. for as low as	$320
33MHz 486DX w/Instal. for as low as	599
66MHz 486DX VLBus w/Instal. for as low as	925

Upgrade to a Fast Graphic Card:

Paradise 1280 Win. Accel. w/1MB w/Instal	$135
Orchid Fahrenheit 1280 w/1MB w/Instal	199
Stealth 1280 S3 w/1MB w/Instal	289

Upgrade to a Larger Hard Drive:

120MB HD w/Cntrl. and Instal	$359
175MB HD w/Cntrl. and Instal	429
200MB HD w/Cntrl. and Instal	490

Call our Sales Specialist for details.

HEWLETT PACKARD

SCANJET IIp F/PC-AT
$829.00

SCANJET IIp F/MAC
***$695.00**

SCANJET IIc F/PC-AT
$1429.00

SCANJET IIc F/MCA
$1459.00

SCANJET IIc F/MAC
$1175.00

DESKJET PORTABLE
$395.00

DESKJET 500/DESKWRITER
$390/*$329.00

DESKJET 500C/DESKWRITER-C
$499/*$459.00

DESKJET/ DESKWRITER 550C
$699.00

LJ-IIP+
$769.00

LJ-IIIP
$955.00

LJ-III
$1429.00

LJ-IIID
$2279.00

LJ-4
$CALL$

TONER II, III, IIID
$89.00

TONER IIP, IIIP
$79.00

*AFTER $ REBATE $

COMPAQ

COMPAQ 386 LTE NOTEBOOK
386SX/20, 4K CACHE, 2MB RAM EXPANDABLE TO 10MB, INTERFACES INCLUDING SERIAL, PARALLEL, MOUSE, EXTERNAL OPTION, NUMERICAL KEYPAD AND EXTERNAL VGA, VGA LCD 16 GRAY SHADE SCREEN, 1.44MB FDD, 30MB HARDDISK
*OPTIONAL 60/84/120MB HARDDISK

STARTING FROM **$1299.00**

COMPAQ DESKPRO 386SX/16
386SX/16, 2MB RAM, VGA PORT, 1.44MB FDD, 30MB HDD, SERIAL & PARALLEL PORT, MOUSE PORT, 101 ENHANCED KEYBOARD.
*OPTIONAL 60/84/120MB HDD

STARTING FROM **$695.00**

COMPAQ MOUSE AT **$19.95** WITH SYSTEM PURCHASE/FREE SOFTWARE

For Compaq ProLinea, DeskPro I, "M" and Notebook series, call for special price.

Apple®

POWERBOOK 145 4/40	$1959.00	POWERBOOK 160 4/80	$2559.00
POWERBOOK 180 4/80	$3788.00	POWERBOOK DUO 210 4/80	$2199.00
POWERBOOK DUO 230 4/80	$2438.00	POWERBOOK DUO 230 4/120	$2779.00
MAC Classic II 4/40	$919.00	MAC Classic II 4/80	$1068.00
MAC LC-II 4/40	$1095.00	MAC LC-II 4/80–no kybd	$1195.00
MAC IIsi 3/40	$1459.00	MAC IIsi 5/80	$1689.00
MAC IIci 5/80	$2283.00	MAC IIvx 5/80 CD-ROM	$2759.00
STYLEWRITER	$335.00	IMAGEWRITER II	$395.00
LASERWRITER LS	$869.00	PERSONAL LASERWRITER NTR	$1626.00
LASERWRITER IIf	$2489.00	13" HI-RES RGB	$463.00
14" COLOR MONITOR	$559.00		

Also carry NEC, EPSON, AST, OKIDATA...More
CALL FOR UNLISTED PRODUCTS

BETTER DOMAIN INC./COMPUTERLAND

8919 RESEDA BLVD., NORTHRIDGE, CA 91324

VISA **TEL: 818-886-5511 FAX: 818-886-5583** MasterCard

*Price subject to change without notice.

continued from page 68

THE NEED FOR EMAIL POLICY

Borland could have strengthened its case against Wang if it had followed the recommendation of the Electronic Mail Association to announce its policies on electronic mail. As it was, a source says the Santa Cruz County District Attorney staff took potential violations of the electronic privacy act so seriously that they used a top computer-crime prosecutor from the San Francisco area to help write the search warrants.

Despite Borland's hard-learned lessons, it continues to refuse to implement a formal email privacy policy that declares just when electronic messages sent from company equipment are company property. Perhaps Borland is afraid that announcing such a policy would simply remind miscreants to erase incriminating email files before they are found. If so, that's naive and shortsighted.

Some companies may be reluctant to announce in advance that they are constantly snooping. So be it, but then they should refrain from scanning MCI in-boxes. Whatever they do, they have to confront the reality of the enormous power of digital media. In an age when a company's most valuable property may be intangible—the source code for a software package, for example—an email account may amount to an unlocked door on a warehouse.

It's easy to understand the anger Borland executives felt in discovering an apparent information hemorrhage.

The electronic privacy act's procedures may need streamlining, and the Borland case may be the ratchet that makes the adjustments. By the time Borland could have obtained court authorization to examine Wang's electronic mail, some of the messages might have been deleted by MCI's automated five-day cleanup function. New legislation requires fine-tuning in the light of the complexities of real world situations in order to be effective for the purposes for which it was originally designed. But the lesson here is that corporations must begin to adjust their own policies to fit the technologies they use. ■

ALL PRICES ARE DEALER'S PRICES!!

FREE MODEM OR MOUSE IF WE CAN'T BEAT ANY PUBLISHED ADVERTISED PRICE.

486DX2-66 System
.256 K Cache
.4 Mb RAM
.1.2 Mb & 1.44 Mb FD
.200 Mb Hard Drive
.IDE Controller
.2S/1P/1G Port
.SVGA Card w/1M
.1024x768 SVGA Monitor
.101 Enhanced Keyboard
.High Resolution Mouse
$1,598

486DX-50 System
.256 K Cache
.4 Mb RAM
.1.2 Mb & 1.44 Mb FD
.130 Mb Hard Drive
.IDE Controller
.2S/1P/1G Port
.SVGA Card w/1M
.1024x768 SVGA Monitor
.101 Enhanced Keyboard
.High Resolution Mouse
$1,448

486SX-25 System
.4 Mb RAM
.1.2 Mb & 1.44 Mb FD
.130 Mb Hard Drive
.IDE Controller
.2S/1P/1G
.SVGA Card w/1M
.1024x768 SVGA Monitor
.101 Enhanced Keyboard
.High Resolution Mouse
$1,088

HOT 486

486-33DX System
*4 Mb RAM
*1.2 Mb & 1.44 Mb FD
*130 Mb Hard Drive
*IDE Controller
*2S/1P/1G Port
*SVGA Card w/1M
*1024x768 SVGA Monitor
*101 Enhanced Keyboard
$1,238

c a s h p r i c e

HOT386

386DX-40 System
*4Mb RAM
*1.2 Mb & 1.44 Mb Fd
*120 Mb Hard Drive
*IDE Controller
*2S/1P/1G Port
*SVGA Card w/1M
*1024x768 SVGA Monitor
*101 Enhanced Keyboard
$928

TRAVELER'S ANGEL---PALMBOOK/PALMTOP

CPU	V30HL (8086) 7 15 MHz Clock Speed
DISPLAY	80 X 25 Columns, Black & White LCD 640 x 200 Resolution CGA Emulation with 16 Grey Levels 7.63" x 3" Viewing Area
KEYBOARD	Qwerty 81 Key
POWER	AA Battery x 2. Lithium Battery x 1
DIMENSION	10.21" (W) x 4.8" (L) x 1.04" (H)
WEIGHT	1.3 lbs. (Including Batteries)

$628

Full Network System

One 386 File Server	Two Network Stations
80386DX-40 Mhz	80386SX-25 Mhz
4 Mb RAM	1 Mb RAM
1.2 Mb & 1.44 Mb FD	1.2 Mb & 1.44 Mb FD
2S/1P/1G Port	2S/1P/1G Port
130 Mb Hard Drive	16 Bit Ethernet Card
IDE Controller	
14" Mono Monitor	

*Netware Version 2.2 - 5 Users
$2,688

*Free Installation
*Custom Design With Lowest Price

Computer Super Support

MicroMaxi Technology Inc.

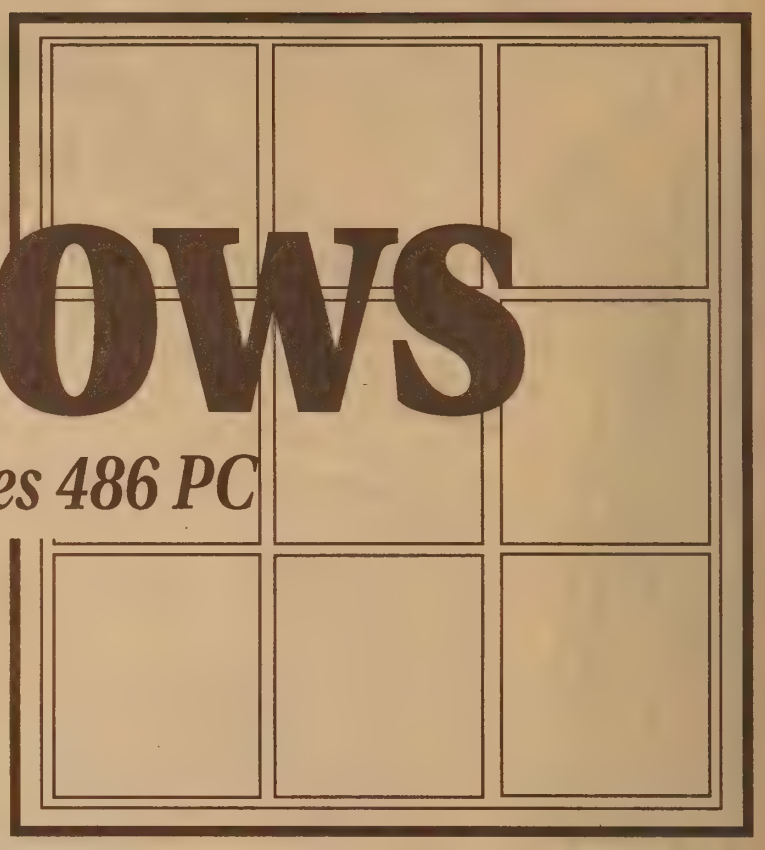
1224 Santa Anita Ave., # C S. El Monte, CA 91733

Hot Line: (818) 442-8298 7 Days Services!

Prices subject to change without notice. / Excellent service & technical support. / Delivery available.

Amiga Does Windows

Golden Gate Card Emulates 486 PC



BY DOUGLAS J. NAKAKIHARA

PC compatibility is an important issue even among MS-DOS machines; however, it is a significantly more difficult issue for the Amiga, which doesn't use the MS-DOS operating system. Although the Amiga can read and write PC-formatted disks, the available software-based PC emulators are not up to the task of running resource-hungry applications like Microsoft Windows.

Fortunately, the Amiga was specifically designed to have hardware-based PC emulation added on. The Amiga 3000, for example, has four internal slots, two of which can be used for PC/AT cards. However, you can't just plug a PC card into your Amiga and use it. One of the slots must be occupied by a PC-emulator card—Commodore refers to these as "bridgecards." (There are certain exceptions, like PC time-based corrector cards, which only use the Amiga bus for electrical power.)

Vortex's Golden Gate 486SLC (GG) is the first commercially distributed PC emulator built around a 486 processor, specifically the Cyrix 486SLC microprocessor at a speedy 25MHz. Though no "Intel Inside" sticker appears anywhere, the 486SLC is compatible with the Intel 486SX instruction set. The only thing missing from the 486SLC is the math coprocessor, but this can be added with a separate chip.

The GG is a Zorro II board designed to operate in any Amiga 2000/3000/4000 series computer. The thick manual that comes with the board gives good installation instructions and even provides pictures of the board being installed in an Amiga 2000 and 3000. The manual is written in German, English, and French. All three versions are included in the single manual. (The manual shows its German origins, and the English instructions sometimes require a little interpretation.)

RANDOM ACCESS MEMORY

The standard GG model ships with 2MB of RAM using two one-meg SIMMs. Since the board can only hold four SIMM modules, you cannot reach the maximum 16MB. Therefore, you should opt for the version that ships with two four-meg SIMMs, which will allow you to max out the board at 16MB.

Besides adding RAM directly to the emulator board, you have the option of using part of your Amiga RAM as PC RAM. This may give you a performance hit, however, since Amiga RAM is generally slower than the GG's RAM. Conversely, you can also allocate up to 4MB of the GG's RAM to the Amiga side. This is a hardware setting and cannot be changed on-the-fly. This is a great feature since Amiga RAM is generally more expensive than its PC counterpart.

DISK STORAGE

As far as storage peripherals go, the standard GG comes with an IDE hard disk interface, which allows you to hook an IDE hard disk directly to the board. You will also have access to any Amiga hard or floppy disk drive from the PC side. You can either allocate an entire hard disk partition for GG's use, or you can emulate a partition using a file. Both are just as easy to set up; however, the file method will be much slower. Normal Amiga floppies can be used as 720K PC drives. If you are lucky enough to have high-density Amiga drives, these can read and write 1.44MB PC disks.

The optional floppy disk controller gives you the ability to hook up two standard PC floppy disk drives directly to the GG board. These can range from an ancient 5.25" 360K drive all the way up to a 2.88MB 3.5" floppy drive. Vortex even provides a special utility for formatting the 2.88MB disks, if you are using an MS-DOS that predates v5.0.

1.44MB disk access is virtually a necessity nowadays, and this can present a problem for A3000 owners. Since the A3000 has a special floppy faceplate, there is no way to mount a PC floppy internally. Furthermore, though an external floppy drive port is mounted on the back of the GG, these drives are not common, and they're very expensive.

I was able to come up with a temporary solution, however. Using my XT as a huge power supply, I simply connected the GG's floppy cable to the 1.44MB floppy mounted in my XT. Based on the success of this solution, I assume you could mount a 3.5" PC floppy drive in an external hard disk case with power supply, and connect it to the GG, either using the floppy cable or via the GG's external floppy port (you'd probably have to build your own cable though). Fortunately, once the software is loaded, a 1.44MB disk is not a requirement. Most software is available in the 720K format anyway.

The GG board also ships with what's called Server software. Basi-

continued

RESOURCES:

Golden Gate 486SLC, $1099
Floppy disk controller
Monitor Master
Vortex
3835 Richmond Ave., Ste. 138
Staten Island, NY 10312
(718)967-1509
fax (718)948-0893

Copyright © 1993 by Douglas J. Nakakihara. All rights reserved.

PC CONSULTANT CLUB

INTEL 486DX™
VESA LOCAL BUS SYSTEM

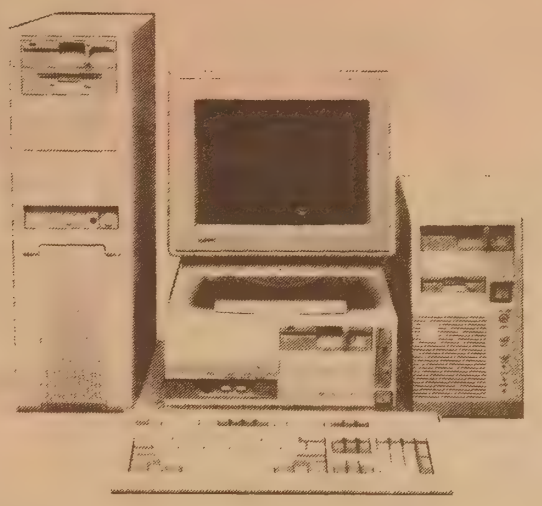
- Medium Tower Model
- INTEL 486DX™ CPU
- 2 (32 Bits) Local Bus Slots
- 4MB RAM/256K Cache
- 1.2MB And 1.44MB FDDs
- IDE 32Bits HDD/FDD Local Bus
- 210MB IDE Hard Disk 13ms
- Super VGA VESA Local Bus 16.7 Mils Colors Resolution Up To 1280x1024
- 2 Serial/1 Parallel/Game
- 101 Enhanced Keyboard
- 14" Non-Interlaced Super VGA Monitor
- Hi-Resolution Serial Mouse

I486DX/33MHz $1734
I486DX/50MHz $1895
I486DX2/50MHz $1854
I486DX2/66MHz $1998

INTEL 486DX™
EISA/ISA/VESA LOCAL BUS COMBO

- Medium Tower Model
- INTEL 486DX™ CPU
- 4MB RAM/256K Cache
- 1.2MB And 1.44MB FDDs
- IDE (EISA Bus) w/2MB Cache Controller
- 210MB IDE Hard Disk 13ms
- Diamond Stealth 1MB VRAM 1280x1024 Or CL1280x1024 32 Bits Local Bus VESA 2MB Video Display Controller
- 101 Enhanced Keyboard
- 2 Serial/1 Parallel/Game
- 14" Non-Interlaced Super VGA Monitor
- Hi-Resolution Serial Mouse

I486DX/33MHz $2064
I486DX/50MHz $2225
I486DX2/50MHz $2185
I486DX2/66MHz $2328



INTEL 486DX™
ISA BUS

- Minitower Or Desktop Model
- INTEL 486DX™ CPU
- 4MB RAM/256K Cache
- 1.2MB And 1.44MB FDDs
- IDE + I/O (2 Serial/1 Parallel/Game)
- Trident 8900CL 32 Bits Bus RAM 1MB SVGA (1280x1024) Controller
- 120MB IDE Hard Disk Maxtor
- Super VGA 14" Color Monitor
- 101 Enhanced Keyboard
- Hi-Resolution Serial Mouse

I486DX/33MHz $1422
I486DX2/50MHz $1583
I486DX/50MHz $1543
I486DX2/66MHz $1687

AMD 386DX/40MHz™
ISA BUS

- Minitower Model
- AMD 40MHz™ CPU
- 4MB RAM/128K Cache
- 1.2MB And 1.44MB FDDs
- 120MB IDE Hard Disk
- IDE + I/O 2 Serial/1 Parallel/Game
- Trident 8900CL 32Bits Bus RAM 1MB SVGA (1280x1024) Controller
- Super VGA 14" Color Monitor
- 101 Enhanced Keyboard
- Hi-Resolution Serial Mouse

$1100

PC CONSULTANT CLUB

- Running on a US Robotics Dual Standard Modem
- 14,400 Baud - 1200 Baud V.32/V.32bis/hst
- Latest hardware support drivers on-line
- Private area for Dealers and Resellers
- Tech support questions and answers
- Shareware programs and utilities
- Hardware spec/data sheet on-line
- Up-to-date On-line price list
- 100's of items listed
- Weekly specials

CADD STATION CUSTOMIZED TO YOUR NEEDS!

- 1486DX/50MHz 8MB Of RAM Computer
- 20" Hitachi Monitor 1280x1024
- Summagraphics 12x12 Digitizer
- HP/Houston Int. Plotter

$$PLEASE CALL FOR PRICES$$

ISA BUS

- Minitower Model
- 386SX/33MHz CPU
- 2MB RAM Installed
- 1.2MB And 1.44MB FDDs
- IDE + I/O 2 Serial/1 Parallel/Game
- 85MB Hard Disk 18ms
- Super VGA Monitor 14"
- Super VGA Controller
- 101 Enhanced Keyboard
- Hi-Resolution Serial Mouse

$855

NOTEBOOK 486/386

- INTEL 486DX™ CPU
- 4MB of RAM/64K Cache
- 1.44MB Micro Floppy
- 2 Serial/1 Parallel/120MB HDD
- VGA Gray Scale Screen
- 7 Lbs./3 Hrs. NICAD Battery
- Carrying Bag and AC Adapter
- Hi-Resolution Serial Mouse

$$PLEASE CALL$$

- We do Novell & Lantastic networking
- Call for configurations not listed!
- Dealer and Consultant inquiries welcome
- Prices subject to change w/out notice

Buena Park
6800 Orangethorpe Avenue #E
Buena Park, CA 90620
(714) 228-1714

Garden Grove
14351 Euclid Street - Unit R
Garden Grove, CA 92643
(714) 554-3892
FAX: 714-554-8169

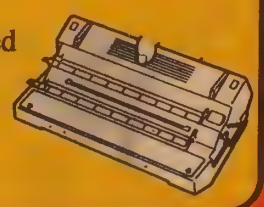
PC Solutions

19330 Ventura Blvd.
Tarzana
Phone (818) 342-8703

HP Toners

Hassle-Free Guarantee

- Recharged Toner Cartridge
- New Packaging
- New Wand
- Fully Guaranteed
- **Great Deal**



$29.99

With Empty Core

486SX-25MHz 120MB SVGA System

- 80486SX 25MHz CPU
- 1MB upgradeable to 32MB
- 1.44MB, 3.5" Floppy Drive
- IDE 2 Hard, 2Flopp y Cntrllr
- 120MB Hard Disk Drive
- 1024x768 VGA Adapter
- Enhanced 101 Keyboard
- Mini Tower Case

$788

MS-DOS & Monitor sold separately.

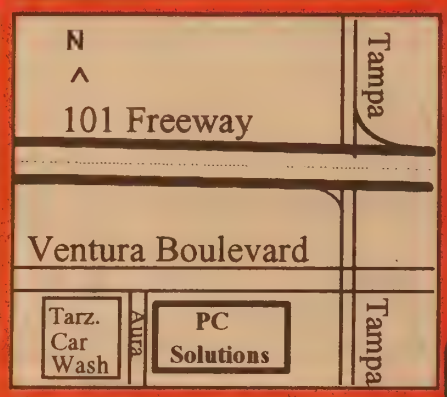
altima Notebook

486SLC-33

- 486SLC-33MHz CPU
- 2MB RAM
- 120MB Hard Disk Drive

$1985

Tune in to CBS-FM to hear Tarzan and Jane talk about our weekly specials!



Unbeatable Service

- 7 Days a Week
- Factory Service Center
- Laser and Dot Matrix Printers
- Repair and Maintenance of PC Systems and Networks

MultiMedia and Desktop Video

Cardinal SNAPPlus **$987**

- Complete VGA and Video Compatibility for Input and Output from and to Video, VGA, NTSC & Others
- Advanced Genlock with 24-Bit Color Video Capture
- Real-time Video Control and Special Effects
- 16-Bit VGA Overlay on Video

Mathematica Media Author . **$999**

- IncludesTempra Pro 3.0 and Turbo Animator 3.1
- Interactive Multimedia
- Desktop Video Production
- Animation Editor
- Color Processing and Video Digitizing
- Database Management Systems

Seiko Monitor

CM1450 ..... **$445**

- 14" Multisync
- .25mm , 1024x768
- Noninterlaced

Bulletin Board System

Connect to the world through our state of the art BBS. A local call to you at:

(818) 776 - 2397

Hard Disk Drive

- 3.5"IDE 120MB HDD, 64K Cache
- 19ms A erage Access Time
- #XE3120

$229

Large Screen Monitor

- 17" Super VGA Monitor
- 1024x768, .31mm resolution
- Flat Screen

$694

386SX-25MHz

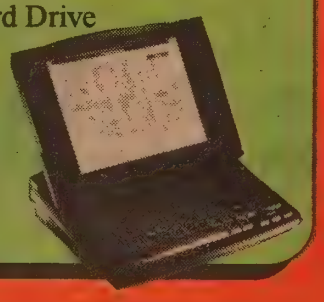
- 80386SX 25MHz CPU
- 1MB RAM
- IDE 2 Floppy, 2 Hard Controller
- 1.44MB, 3.5" Floppy Drive
- Enhanced 101 Keyboard
- Mini Tower Case

$398.33

BCC Notebook Avanti

- 486SLC-25MHz
- DOS 5.0, Windows 3.1, WinFax
- Internal Data/Fax Modem
- 120MB Hard Drive
- 4MB RAM
- and More!

$2493



PC Solutions, Inc. is Your Everyday Discount Software Store. We have a large inventory of children's and educational software. Compare and shop in confidence.

Not responsible for typographical errors.

Prices are good through March 18, 1993. Limited quantities. Limit rights reserved.

Prices in this ad are cash and carry only.

The Local Valley Solution

In business for almost twelve years under the same ownership, PC Solutions, Inc. is today the *oldest* and *largest* computer retail store in the San Fernando Valley. Staying in business in the same town of Tarzana, home of Tarzan, for that long means that we depend on customer satisfaction, *your satisfaction*, to bring us referrals. Come see how providing that satisfaction has helped us to become THE Multimedia Center of the Valley!

PC Solutions

19330 Ventura Blvd.
Tarzana
Fax (818) 342 - 7117

Panasonic Panaboard

Electronic Print Board

- Makes letter size copies of whatever is written on or taped to writing panel
- Can be used as wall unit or freestanding

$688.00

Citizen Printers

GSX 230 ..... **$245**

GSX 240 ..... **$299**

- Ultra-quiet operation
- Color on command
- Scalable fonts

PN48 Professional **$329**

Mother of all Boards

386SX 25MHz **$94**

386SX 33MHz **$112**

386DX 40MHz **$173**

486DX 33MHz **$525**

486DX2 66MHz **$825**

Fully tested, prices do not include installation

Panasonic Printers

KX-P1123 . . . **$198**

KX-P1124i . . **$275**

KX-P2123 . . . **$240**

KX-P2180 . . . **$179**

Windows for Workgroups Bundle

Live Demo

Easy, Instant Network!

Kit Includes:

- (2) 16 Bit Ethernet Cards (Lifetime Warranty)
- (2) copies of Windows for Workgroups
- Connectors & 50' cable
- Expert Installation Available

Two User Starter Kit **$399**

CD-ROM Drives

- MPC Compatible
- 2-Year Warranty
- 375ms Access Time
- 650MB Capacity

Internal **$265**

External **$329**

Chips & SIMMs

1 MB SIMM **$38**

4MB SIMM **$133**

2MB Exp. Board **$144**

- Panasonic KX-P4410/4430
- #KTP410LP/2

Prices do not include installation

We are Specialists in . . .

- Accounting and Bar-code
- Networking
- Hardware and Software
- Multimedia Specialties
- Repair and Maintenance, On-site and In-store

Monitors

- Aamazing 14" Super VGA
- 1024x768
- .39 Dot Pitch

$221

Microsoft "Desktop Video" for Windows

Video for Windows **$126**

- #232-051V100

Sound for Windows **$184**

- #206-050V100

Live Demo

486DX-33MHz

- 80486DX 33MHz CPU
- Mini Tower Case
- 1MB RAM upgradeable to 32MB
- IDE 2 Floppy, 2 Hard Controller
- 1.44MB, 3 1/2" Floppy Drive
- Enhanced 101 Keyboard

$727

CD-ROM Center

We carry Los Angeles County's

LARGEST

collection of CD-ROMs at the

LOWEST

Retail Store Prices

GUARANTEED!

Business Hours: Monday - Friday 8:00am - 6:00pm; Saturday 10:00am -5:00pm; Sunday 11:00am - 4:00pm

Performance and Price...

INTEGRATED 32 BIT IDE CONTROLLER & SVGA VIDEO

SINCE 1987, ACI has provided thousands of our customers through out the United States with superb systems built to meet their specific requirements. ACI's committment to YOU provides a full 1 YEAR WARRANTY on LABOR and PARTS, 72 HOURS BURN-IN TIME and QUICK DELIVERY with UPGRADES AVAILABLE!

LOCAL BUS SUPERSTATIONS

WINDOWS SYSTEMS

- 486DX-50 EISA 256K Cache w/105MB H/D — $1479
- 486DX-50 Local Bus 256 K Cache w/105MB H/D — $1299
- 486DX-50 ISA 256K Cache w/105MB H/D — $1329
- 486DX2-50 ISA 256K Cache w/105MB H/D — $1289
- 486DX-33 EISA 256K Cache w/105MB H/D — $1479
- 486DX-33 Local Bus 64K Cache w/105MB H/D — $1169
- 486DX-33 64K Cache w/105MB H/D — $1129
- 486SX-25 Local Bus 64K w/105MB — $1039
- 486SX-25 64KCache w/105MB H/D — $999
- 386DX-40 64K Cachew/105MB H/D — $899
- 386DX-33 64KCache w/105MB H/D — $859
- 386SX-33 w/105MB H/D — $819
- 286AT-20 w/105MB H/D — $789

- 486DX2-66 EISA 256K Cache w/105MB H/D — $1589
- 486DX2-66 ISA 256K Cache w/105MB H/D — $1429

NOTEBOOKS

386SX-20MHz
2MB RAM • 60MB H/D • VGA (Sanyo)
$1139

486SLC-25MHz
4MB RAM • 80MB H/D • Fax/Modem
$1719

486SX-25MHz
4MB RAM • 120MB H/D • VGA
$1539

486DX-33MHz
4MB RAM • 120MB H/D • VGA
$1899

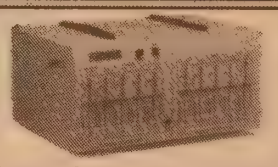
COMPREHENSIVE NETWORKING SUPPORT • NOVELL & UNIX

Custom Configuration Based On Your Requirements
AUTHORIZED NOVELL AND UNIX

File Server
- 80486DX-33MHz or 50MHz
- Intel CPU, 4MB Ram, 256K Cache
- 120MB or 210MB SCSI H/D
- 1.2MB & 1.4MB FD
- SVGA N-I Color Monitor
- 24/96 Fax & Modem or 14.4K F/M

5 Workstations
- 386SX-25MHz
- 1MB Ram, 1.2M F/D & Mono Monitor

CALL FOR MORE INFORMATION!



SUPER COPYSTAR 15 (5 Sets)
- Model CM 510 H (5 1/4" 1.2MB FD)
- Model CM 610 H (3 1/2" 1.4MB FD)
- Format Suitable: Auto Switch 2D/2HD
- Copy Track: 0-39/0-79
- Copy Speed: 32/52 Sec.
- Display: LCD (20x2)
- Switching Power: 200W
- AC Input: 110V/220V, 50Hz/60Hz
- Cooling Fan: DC 12V, 0.12A
- Size (LxWxH mm): 368x254x258
- Packing Size (LxWxHmm): 500x376x384
- Net Weight: 13.5 Kgs

$3199

SUPER COPYSTAR 20 (10 Sets)... Call

• MOTHERBOARDS •

VEGA 486DX2-66MHz EISA 256K C	$1009
VEGA 486DX-50MHz EISA 256K C	$899
VEGA 486DX-33MHz EISA 256K C	$749
OPTI 486DX2-66MHz EISA 256K C	$899
OPTI 486DX-50MHz EISA 256K C	$789
OPTI 486DX2-50MHz EISA 256K C	$769
OPTI 486DX-33MHz EISA 256K C	$649
VESA 486DX2-66MHz ISA 256K C. L/B	$759
VESA 486DX-33MHz ISA 256K C. L/B	$519
486DX-50MHz ISA 256K C. L/B	$609
486DX-33MHz ISA 256K C. L/B	$469
486SX-25MHz ISA 64K C. L/B	$329
UMC 486DX2-66MHz ISA 256K C	$739
UMC 486DX-50MHz ISA 256K C	$629
UMC 486DX2-50MHz ISA 256K C	$599
UMC 486DX-33MHz ISA 256K C	$479
486SX-25MHz ISA 64K C	$309
486SX-33MHz ISA 64K C	$339
486SX-25MHz ISA 64K C	$285
386DX-40MHz ISA 64K C	$179
386DX-33MHz ISA 64K C	$169
386SX-40MHz ISA 64K C	$145
386SX-33MHz ISA 64K C	$129
286AT-20MHz	$79

• SMARTLINK MODEMS •

Internal 2400BPS w/Comit. NMP Class 5 Software	$32
Internal 9600BPS/2400BPS Send/Receive Fax/Modem (Includes Superfax For Windows 3.1 & Comit. S/W)	$67
Internal 9600BPS Modem w/V.32/V.42bis/V.42MNP5	$169
Internal 14.4K Fax/Modem V.17 Fax/ V.32 Bit/ V.32/ V.42MNP5 (Includes Superfax For Windows 3.1 & Comit S/W)	$205
Pocket Size External 9600/2400BPS Fax/Modem	$97
External 24/96/14.4K	CALL

• KEYBOARDS •

BTC 5339 101 Keys	$32
FOCUS 2001 101 Keys	$41
FOCUS 5001 130 Keys	$60
FOCUS 7000 101 Keys	$38
FOCUS 8000 111 Keys	$47
FOCUS 9000 128 Keys	$72
Fujitsu 4700 101 Keys	$45

• MICE •

Summagraphic 12x12, 12x18	CALL
Microsoft Mouse Serial (OEM)	$45
Microsoft Mouse Serial & PS/2 Version	CALL
Microsoft Mouse Bus Version	$89
Logitech Serial Combo Mouseman	CALL
Logitech Trackball	$85
Logitech Fotoman	$596
Logitech Scanman 32GS/O.C.R.	$205
Logitech Scanman 256G/O.C.R.	$327
Mouse Pens (For Notebook/Laptops)	$37
Z-Nix Mouse w/Windows 3.1	$49

• ARCNET/ETHERNET •

8 Bit, Arcnet	$45
8 Bit, Ethernet	$95
16 Bit, Arcnet	$75
16 Bit, Ethernet	$99
NETWARE VER. 2.2 (5/10 USER)	CALL
NETWARE VER. 3.11 (5/10/20 USER)	CALL
SUNSOFT (ICS) UNIX	CALL
SUNSOFT (ICS) UNIX W/S PLATFORM	CALL
SUNSOFT (ICS) UNIX WINDOWING	CALL

• CD-ROM •

SONY C535 (Bus Card Included)	$342
SONY C31A (Interface Card Included)	$284
MITSUMI (Interface Card Included)	$272

(All CD-ROM Comes with ONE FREE SOFTWARE!)

•ULTRASTOR CACHING CONTROLLER•

ULTRA12F 1:1 ESDI F/HD Controller	$175
ULTRA12F-24 1:1 (24MBits)ESDI F/HD	$185
ULTRA12C ESDI Caching F/HD Controller w/1M	$429
ULTRA15C IDE Caching F/HD Controller w/1M	$259
ULTRA15C IDE Up To 8MB SIMM	$189
ULTRA22F ESDI 32 Bit 64K Cache	$349
ULTRA24F SCSI 32 Bit 64K Cache	$379
DC99 IDE 16 Bit Cache Controller (Up to 8MB)	$129
AHA-1542B SCSI Floppy/HDAdapter	$259
AHA 1542BK SCSI Bus Master Host Adapter	$309
AHA 1522 16 Bit DOS SCSI	$129
AHA 1522K 16 Bit w/Kit SCSI	$169

• VIDEO/CONTROLLER •

MGP	$15
VGA 800x600 256K Cache	$29
Trident 512K	$42
Trident 1MB	$64
ATI VGA Wonder XL 1MB (32,768 Colors)	$125
ATI VGA Wonder 1MB	$105
ATI Graphic Ultra1MB VRAM	$359
ATI Graphic Ultra/Ultra Plus 1MB VRAM Card	CALL
ATI Graphic Vantage1MB	$225
Genoa VESA S3 1MB Local Bus	$185
Diamond Speed Star 24X 1MB (16 Million Colors)	$179
Diamond Stealth 1MB(VRAM)Window Accelerator	$225
Orchid Pro-Designer II 1MB VGA Card	$145
Orchid Pro-Designer IIs EISA Sierra 1MB	$175
Orchid Fahrenheit 1280, 24 Bit, 1MB (16.7 Million Colors)	$235
AT I/O (2S, 1P, 1Game) Ports	$15.75
AT IDE (Dual HD/FD Controller) w/Cable	$15.75
AT Super IDE w/I/O (Dual HD/FD) Controllers	$20.40

• HARD DISK /TAPE BACKUP•

Seagate All Models	CALL
Maxtor All Models	CALL
Conner All Models	CALL
1.2MB FDD (5.25")	$55
1.4MB FDD (3.5")w/Mounting Kit	$52
40MB IDE HDD (29ms)	$159
80MB IDE HDD (17ms)	$219
120MB IDE HDD (17ms)	$239
170MB IDE HDD (17ms)	$279
210MB IDE HDD (16ms)	$349
340MB IDE HDD (13ms)	$639
340MB SCSI HDD (13ms)	CALL
535MB IDE HDD (12ms)	$899
675MB IDE HDD	$1149
676MB ESDI HDD (16.5ms)	CALL
675MB SCSI HDD (16.5ms)	CALL
1.2GB SCSI HDD (13ms)	CALL
120M Tape Back Up Internal	CALL
250M Tape Back Up Internal	CALL
2GB Tape Back Up Internal	CALL

• MONITORS •

Edition 14" Amber	$89
Edition 14" White	$89
Edition 14" SVGA .39DP	$229
Shamrock 14" (1024x768).28DPI Interl	$265
Shamrock 14" (1024x768).28DPI N-I	$299
Shamrock 15" (1280x1024).28DPI N-I	$439
Shamrock 20" (1280x1024).28DPI N-I	$1249
NEC Multisync 3FGX 15" (1024x768, 28DP)	$669
NEC Multisync 4FG 15" (1024x768, 28DP)	$779
NEC Multisync 5FG 17" (1280x1024, 28DP)	CALL
NEC Multisync 6FG 21" (1280x1024, 28DP)	CALL
Mitsubishi Diamond Pro 17" (1280x1024, .26DPI)	CALL
Sony CPD-1604S 17" (Non-Interlaced, .25DP) Color	CALL
Viewsonic 7 17" Multi-Frequency(1280x1024).28DPI	CALL
MAG 17" Mx17H (1024x768, .26 DPI)	CALL

COMPLETE SYSTEMS ABOVE INCLUDE:
1MB RAM of High Speed 70ns
1024 x 768 SVGA card
105MB IDE Hard Drive
1.2MB & 1.4MB Floppy Drive
1 Parallel, 2 Seriel, 1 Game Port(s)
14" SVGA Color Monitor
101 Key Enhanced Keyboard
Desktop or Mid Tower Case w/Digital Display
Serial Mouse

UPGRADES

VIDEO UPGRADE
- Diamond Speed Star 24x1MB $119
- Diamond Stealth1MB VRAM $179
- Local Bus VGA 1MB (1280x1024) $109
- SVGA 1MB Windows Accelerator (1280x1024) $59

HARD DISK
- 210MB IDE 15ms $159
- 340MB IDE 15ms $479
- IDE 16 Bit Cache Controller $119
- IDE 32 Bit Cache Controller $339

MONITOR UPGRADE
- Shamrock 14" Non-Interlaced 1024 x 768, .28DP $89
- Shamrock 15" Non-Interlaced 1280 x 768, .28DP $239
- Shamrock 20" Non-Interlaced 1280 x 768, .28DP $1049
- MAG 17" Non-Interlaced 1280x1024, .26DP $919
- ViewSonic 7 17" N-I 1280x1024, .28DP $829
- Sony 1404 17" N-I $829

ACI COMPUTERS (714) 838-4443

205 W. FIRST STREET • SUITE #106 • TUSTIN, CA 92680

HOURS: Mon.-Sat. 10:00-6PM

Prices subject to change.

FINANCING AVAILABLE

SALES & SERVICE & NETWORKING

Do not use 1st St. off 55 Fwy. as it is closed due to construction.

FAX: (714) 838-5055

VISA MasterCard

Vortex's Golden Gate 486SLC (GG) is the first commercially distributed PC emulator built around a 486 processor.

cally, this is suppose to allow you to access things on the PC side, like floppy or hard disks from the Amiga side. Unfortunately, this is not fully functioning yet; however, Vortex is working on it.

INSTALLATION

My evaluation board came with 4MB of RAM plus the optional floppy disk controller. Installing the GG in my A3000 was a snap, pretty much plug-and-go. I placed the board in one of the bridgeboard slots and ran the installation software. This basically copies the main GG program files to a designated directory and a few special files to the DEVS: and LIBS: drawers. All the software fits on a single floppy and is not compressed. The only out of the ordinary thing I had to do was create a file in the DEVS: drawers that identified my machine as an Amiga 3000.

Before running the emulator, you must set a few preference items. First off, you need to set the language to English. My board came with German as the default language. Next, you need to designate which floppy disk drives will be used as PC drives A and B. As stated previously, this can be the Amiga's or GG's external/internal floppy drives.

If you will be using a hard disk, you will next identify which hard disks (you can have multiple HDs) the board should use. Again, these can be Amiga HDs or ones attached on the PC side. For my setup, I designated an entire 42MB Syquest partition as PC drive C. This external drive is connected to my A3000's SCSI port.

One word of caution here. If you will be using a file to emulate a partition, you need to exit (and save the settings) after you set the language to English, and rerun the setup program. If you don't, you will not be able to type in the full path name for the file, since the keyboard will be mapped incorrectly and German characters will come out instead of characters like the colon (:).

DISPLAY

The last two settings on this screen are for the boot disk and display mode. The boot setting gives you the option of always booting from the hard disk bypassing the floppy. For displays, the GG emulates a variety of PC screens on the Amiga. Limited color is possible, but for the most part color slows the display emulation down to unacceptable levels. The Olivetti/AT&T monochrome display emulation provided excellent display updates, even when I ran Microsoft Windows.

PC display emulation is a real bottleneck, so, alternatively, you can install a separate PC graphics card (e.g., EGA, VGA, etc.) in your Amiga for true blue PC graphics. Normally, this would also require a separate PC monitor. However, Vortex sells Monitor Master, a display switching device that allows the PC and Amiga video outputs to share a single multiscan monitor. Using a simple keystroke, you can toggle between the two displays. Once hooked up, your monitor connections may look like a Christmas tree, but Monitor Master does work as advertised.

It is important to note that using a separate PC graphics card may cause a display size problem. The Commodore 1960 I use with my A3000 has two special switches that eliminate the black border and increase the display to fill the screen. Unfortunately, when the VGA output is sent to the 1960, via Monitor Master, the PC display is stretched to fill the same area, and about one-half inch all the way around the display is hidden. I can switch the 1960 back to the border mode for an acceptable PC display; however, it looks silly when I toggle back to the Amiga side. I was told by Vortex that this situation does not occur with all monitors, and that many VGA-only monitors will not exhibit this annoying behavior.

If you don't need a fast color display, I would recommend sticking with the display emulations. This will leave the PC/AT slot open for something more fun like a CD-ROM or Sound card.

Commodore®
AMIGA®
HOT NEW SYSTEMS!

Save Yourself!

Now through March 31, save up to $1,500 on the Amiga 4000, including DeluxePaint® IV AGA and Art Department Professional® Software. Save up to $440 on the new Amiga 1200 including Deule Paint IV AGA and Final Copy® 1.3 word processing software.

With features like Advanced Graphics Architecture™ and CrossDOS™ for reading and writing MS-DOS® files, you can do it all. From games and word processing to intricate video and-animation. You also get a 24-hour helpline and on-site service.**

Amiga 600,1200 and 4000 Computers Are Priced To Fly!

New! Over 16 Million Colors

Amiga 600 Robocop 3	Amiga 1200 Power-Up Free Software	Amiga 4000 Power-Up Free Software
$399	$598	$2598
*Credit Card Price $411	*Credit Card Price $616	*Credit Card Price $2676

PROFESSIONAL DESKTOP VIDEO

VIDEO TOASTER SYSTEMS-DESIGNED WITH YOU IN MIND!

BEGINNER
AMIGA 2000 With
•52MB Hard Drive
•5MB Ram
•Video Toaster
•14" Monitor
$125 per mo. or cash $4099
Credit Card Price $4222

INTERMEDIATE
AMIGA 2000 With
•52MB Hard Drive
•25MHz
•9MB Ram
•Video Toaster
•14" Monitor
$150 per mo. or cash $5099
Credit Card Price $5252

PROFESSIONAL
AMIGA 2000 With
•100MB Hard Drive
•68040-28MHz
•9MB Ram
•Video Toaster
•14" Monitor
$180 per mo. or cash $6099
Credit Card Price $6282

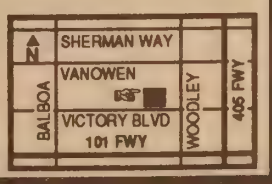
AMILINK
with Video Toaster Software Control
AmiLink/CI; 2 Machine ..... CALL
AmiLink/CI System; 3 Machine ..... CALL
AmiLink/CI System; 4 Machine ..... CALL

COMPUHELP
COMPUTERS

SYSTEM UPGRADES AVAILABLE
Come In For A Free Estimate.

16131 VICTORY BLVD., VAN NUYS
(2 BLOCKS WEST OF 405 FWY)
FAX (818)901-7465 Mon-Fri 10-7 Sat 11-5

EASY FINANCING! 818-901-0280



DC 486DX-33 & 50MHz VESA Standard Monitor & VESA LOCAL BUS System

DC "INTEL" i486DX w/256K Cache VESA LOCAL BUS SYSTEM

* Intel 80486DX-33, 50MHz, DX/2-50, DX/2-66MHz Processor
* 3 VESA COMPLIANT LOCAL BUS Slots & 5 ISA Slots
* HEAT SINK WITH FAN for 50Mhz or 66MHz System
* 256K Cache Memory
* 4MB RAM installed Exp. to 32MB
* Middle Tower case with 230 watt UL/CSA approved power supply
* 1.2MB & 1.44MB TEAC Floppy Drives
* 213MB MAXTOR Hard Disk Drive 14ms
* 1:1 Dual Floppy Drive/Hard Drive Controller card
* 2 Serial, 1 Parallel, 1 Game Port
* VESA Local Bus Super VGA Graphics accelerator card w/1MB Resolution up to 1280X1024. 72Hz refresh rate. 16.7 mil. colors
* 14" VESA standard, 72Hz, 1024X768 NON-INTERLACED color SVGA Monitor .28 dot pitch. Maximum resolution 1280X1024.
* 101 Enhanced Keyboard
* Hi-Resolution Mouse

DC 486DX-33V
213MB HDD System
$1525

DC 486DX-50V
213MB HDD System
$1725

DC 486DX2-50V
213MB HDD System
$1625

DC 486DX2-66V
213MB HDD System
$1825

DC 486DX-33 & 50MHz VESA Standard Monitor & VESA SVGA Card System

DC "INTEL" i486DX w/128K Cache Basic Configuration

* Intel 80486DX-33, 50MHz, DX/2-50, DX/2-66MHz Processor
* 6 16-Bit & 2 8-Bit ISA Slots
* HEAT SINK WITH FAN for 50Mhz or 66MHz system
* 128K Cache Memory
* 4MB RAM installed Exp. to 32MB
* Mini-Tower case with 230 watt UL/CSA approved power supply
* 1.2MB & 1.44MB TEAC Floppy Drives
* 125MB Hard Disk Drive 14ms
* 1:1 Dual Floppy Drive/Hard Dirve Controller card
* 2 Serial, 1 Parallel, 1 Game Port
* Trident Super VGA card w/1MB
* 14" VESA standard, 72Hz, 1024X768 NON-INTERLACED color SVGA Monitor .28 dot pitch. Maximum resolution 1280X1024.
* 101 Enhanced Keyboard
* Hi-Resolution Mouse

DC 486DX-33C
125MB HDD System
$1325

DC 486DX-50C
125MB HDD System
$1525

DC 486DX2-50C
125MB HDD System
$1425

DC 486DX2-66C
125MB HDD System
$1625

VESA Local Bus System Upgrades

Add prices to the above configuration

* Diamond Speed Stealth 24VL VESA Local Bus SVGA card	$ 80
* 15" Color Flat Screen Monitor	$180
* VESA Local Bus IDE Controller	$ 75
* VESA Local Bus IDE Cache controller card w/2MB RAM	$245
* 340MB 12ms IDE Hard Drive	$200
* Upgrade to EISA Local Bus	$200

486 ISA System Upgrades

Add prices to the above configuration

* 256K Cache upgrade	$ 20
* Mid Tower case upgrade	$ 25
* Cirrus Logic graphics accelerator	$ 15
* ET4000 Non-VESA Local Bus Super VGA card (16.7 mil. colors)	$ 45
* 15" Color Flat Screen Monitor	$180
* 170MB 13ms IDE Hard Drive	$ 30
* 213MB 13ms IDE Hard Drive	$100

Financing Available!

D.C. Computer,

Our systems come with 1 year PARTS and LABOR Warranty

DC 486SX-25/33MHz w/64K Cache

* **Intel 80486SX-25/33MHz Processor**
* 64K Cache Memory
* 4MB RAM installed Exp. to 32MB
* Mini-Tower case with **230 watt UL/CSA** power supply
* 1.2MB & 1.4MB **TEAC** Floppy Drives
* **125MB Hard Drive 14ms**
* 1:1 Dual FD/HD Controller card
* 2 Serial, 1 Parallel, 1 Game Port
* Trident Super VGA card w/1MB
* **1024x768 NON-INTERLACED SVGA color Monitor .28 dot pitch**
* 101 Enhanced Keyboard
* Hi-Resolution Mouse

486SX-25MHz $1175
486SX-33MHz $1225

CYRIX 486DLC-33 w/64K Cache

* **Cyrix 486DLC-33MHz Processor**
* **Cyrix Math-coprocessor**
* 64K Cache Memory
* 4MB RAM installed Exp. to 32MB
* Mini-Tower case with **230 watt UL/CSA** power supply
* 1.2MB & 1.4MB **TEAC** Floppy Drives
* **125MB Hard Drive 14ms**
* 1:1 Dual FD/HD Controller card
* 2 Serial, 1 Parallel, 1 Game Port
* Trident Super VGA card w/1MB
* **1024x768 Super VGA color Monitor .28 dot pitch**
* 101 Enhanced Keyboard
* Hi-Resolution Mouse

$1195

DC 386DX-40MHz 64K Cache System

* AMD 80386-40MHz Processor
* 64K Cache Memory
* 4MB RAM installed Exp. to 32MB
* Mini-Tower Case with **230 watt UL/CSA** power supply
* 1.2MB & 1.4MB **TEAC** Floppy Drives
* **125MB Hard Drive 14ms**
* 1:1 Dual FD/HD Controller card
* 2 Serial, 1 Parallel, 1 Game Port
* Trident Super VGA card w/1MB
* **1024 x 768 Super VGA color Monitor .28 dot pitch**
* 101 Enhanced Keyboard
* Hi-Resolution Mouse

$1025

DC 386SX-40MHz 2MB RAM

* **AMD 80386SX-40MHz Processor**
* 2MB RAM installed Exp. to 16MB
* Mini-Tower case with **230 watt UL/CSA** power supply
* 1.2MB or 1.4MB **TEAC** Floppy Drives
* 40MB Hard Drive
* 1:1 Dual FD/HD Controller card
* 2 Serial, 1 Parallel, 1 Game Port
* Trident Super VGA card w/256K
* **1024x768 SVGA color Monitor .28 dot pitch**
* 101 Enhanced Keyboard
* Hi-Resolution Mouse

$765

WE DO COMPUTER UPGRADES. $$$ CALL FOR FREE ESTIMATES. $$$

SOFTWARE SPECIALS

Lotus 123 for Windows V1.1	$95
Lotus AMI Pro for Windows V3.0	$95
Lotus AMI Pro for Windows V2.0	$45
Lotus Freelance V1.0	$45
Norton Desktop for Windows V2.0	$45
Norton pcAnywhere V4.5	$40
FAST! (caching enhancement)	$30
Novell Netware Lite V1.1	$55
QEMM 386 memory manager V6.0	$59

KEYBOARDS

KME-101 Keys Keyboard	$ 20
Keytronics KT-2000 101 Keyboard	$ 45
Fujitsu - 4700 101 Keys Keyboard	$ 45
Focus - 2001 101 Keys Keyboard	$ 45
Focus - 9000 128 Keys Keyboard	$ 65

PRINTERS

Panasonic 1123 24-Pin	$ 192
Panasonic 2123 24-Pin w/color kit	$ 290
Panasonic 2124 24-Pin w/color kit	$ 375
Panasonic 4410 Laser Priner	$ 615
HP DeskJet 500	$ 375
HP DeskJet 500C	$ 515
HP DeskJet 550C	$ 689
HP IIP + Laser	$ 745
HP IIIP Laser	$ 945
HP IV Laser	$1375

MODEMS

2400 Baud Internal Modem	$ 35
96/24 Fax/Modem for Windows w/Winfax	$ 69
14.4 Baud (14.4 Fax) Internal	$219
14.4 Baud (14.4 Fax) External	$259
16.8 Baud (14.4 Fax) w/Voice Mail	$279

MISCELLEANOUS

Microsoft Mouse (Serial)	$ 55
Logitech Mouse (Serial)	$ 65
Logitech Trackman	$ 85
Artec Hi-Resolution Mouse	$ 10
Trackball	$ 25
Colorado 120MB Tape Backup	$195
Colorado 250MB Tape Backup	$245
Sound Blaster Pro	$169
Sound Blaster MultiMedia Upgrade Kit	$560
Windows 3.1 Manual	$ 35
DOS 5.0 Manual	$ 35

CHASSIS

Mini-Tower w/230W UL Power Supply	$ 70
Desktop w/230W UL Power Supply	$ 55
Mid-Tower w/230W UL Power Supply	$ 50
Full-Tower w/230W UL Power Supply	$ 90

MONITORS

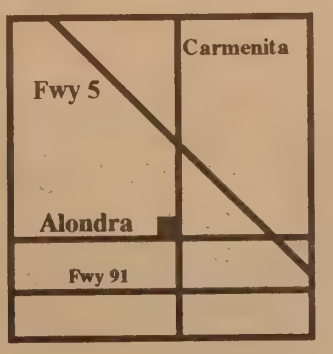
SVGA 14" 1024X768 .28dp	$235
SVGA 14" NI 1024X768 .28dp	$265
SVGA 14" NI 1024X768 .28dp 72Hz	$295
SVGA 15" NI Flat Screen .28dp 72Hz	$445
NEC 4FG SVGA 15" Flat Screen	$735

FLOPPY & HARD DRIVES

125MB Hard Disk Drive	$225
170MB Hard Disk Drive	$255
213MB Hard Disk Drive	$325
340MB Hard Disk Drive	$525
1.2MB TEAC Floppy Drive	$ 55
1.44MB TEAC Floppy Drive	$ 49
SONY 535I (Internal) w/controller	$295
MITSUMI (Interial) w/controller	$215

CALL FOR MORE DETAILS OR COME TO OUR SHOW ROOM TO LOOK AT OUR DEMOS.

INC.



15605 Carmenita Rd. #106
Santa Fe Springs, CA 90670
FAX: (310) 802-2662

Business Hours:
Mon-Fri 10am-7:30pm
Saturday 10am-6:00pm

Tel: (310) 926-9331

Prices subject to change without notice

AMIGA INTEGRATION

The things that this board does are incredible!

First off, the Amiga mouse will emulate a Microsoft mouse using COM1. Under Windows, you don't need to do anything; the mouse will operate immediately. If you aren't going to run Windows, you'll probably have to load a mouse driver in your Config.sys file.

COM2 can be used to communicate with the Amiga serial device. I was able to run communication programs without a hitch. The Amiga parallel port, similarly, acts as the PC parallel port. I printed several letters on my dot matrix printer using the Windows TrueType fonts. These came out as least as good as any Compugraphic font output I'd done using Professional Page.

The emulation multitasks beautifully. You can flip back and forth between the PC and Amiga screens with a simple keystroke. Switching between Windows and an Amiga application is infinitely smoother than switching between Windows applications.

The keyboard mapping is as close to a PC's as you could get. The control, shift, and both Alt keys operate as you'd expect. Even the numeric keypad operates just like the real thing, including combination shift keystrokes. Fortunately, for the most part, the Amiga keyboard is arranged very close to a normal 101-key PC keyboard.

COMPATIBILITY

The GG board ran everything I threw at it, including Windows 3.1, with a few exceptions.

There is a problem using the Amiga floppy disks as PC drives when Microsoft Windows is loaded. With Windows running under DOS 5.0, I was unable to successfully read from or write to floppy disks in my Amiga drives. However, disks placed in the 1.44MB drive cabled to the GG's floppy disk controller worked fine. With Windows not loaded, the Amiga drives worked perfectly. I advised Vortex of the problem; hopefully they will find a solution.

Also, I was unable to get America Online, a communication package, to install successfully. Installation also failed using CrossPC, a software-only PC emulator; however, I was able to install the program on an XT clone. Apparently, the program unnecessarily checks for something that isn't emulated, probably a hardware setting.

SUMMARY

The card is priced about the same as a 486SX PC clone with VGA monitor and large hard drive. However, if you are short on desktop real estate, the GG provides an attractive alternative. You'll also get to share not only modems, printers, and RAM, but also hard disks and presumably CD-ROM. You won't need messy switch boxes and cables either. Once the problems with the Server software get worked out, you'll also be able to access the PC devices from the Amiga side. This may also be a way to sneek an Amiga into busineses as a true PC compatible! The GG will reportedly even run Windows NT.

The GG board allows you to add speedy PC compatibility to the solid multitasking AmigaDOS operating system. It's a great alternative for the current Amiga users being seduced by the onslaught of PC software and hardware. For me, the Amiga delivers everything I need. However, for those that require or lust for PC compatiblity, especially to run Windows, Vortex's GG board is the only one to get. Of course you could always wait for someone to make an Amiga emulator for the PC, but don't hold your breath. ■

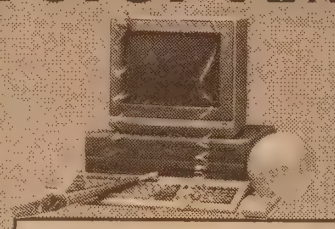
TRANSNATIONAL ELECTRONICS, INC.
YOUR ONE STOP AMIGA STORE

Commodore AMIGA

Video Director	$143
Cine Morph	$105
Final Copy II	$89
Scalammzoo	$299
Morph Plus	$169
Aladdin 4D	$305
World Circuit	$32
Cyber Empires	$35
Darkman	$27
PGA Tour	$33
Mega Fortress 0.5	$27
Vista Pro 2.0	$63
Diplomacy	$22
Powermonger	$33
Populous II	$40
Sim City	$32
688 Attack Sub	$38
Falcon	$31
Police Quest III	$29
Discovery-Columbus	$38
Falcon II	$18

Commodore PRODUCTS

A1200 CPU + Mouse	$565
A600 CPU + Mouse	$385
A600 CPU + 64 MB HD	$675
A600 Robo Cop 3	$695
(PLUS 1084 Monitor)	
A1960 Monitor M/S	$575
A1084S Monitor	$315
A570 CD ROM Or (500)	$389
A530 Turbo	$1125
Phone Pak	$410
G Lock	$425
GF2000/40MHz/8MB	$1290
GF3000/040/33MHz	$1790



Commodore AMIGA

A1200 CPU	$825
PLUS A1084 S Monitor	
A600 Robocop 3	$925
PLUS 64MB/HD	
A1084 S Monitor	
A1200 CPU	$1099
PLUS A1960 Monitor	
A1200	$1389
(64MB/HD)	
A4000	$2495
(68040/120MB/HD)	
LIMITED OFFER!	

VIDEO TOASTER OPTIONS

TBC-III Personal	$892
HW-SCOPE-01 Personal V Scope	$788
Ami Link/CI System	$875
2 Machine Ami Link/CI System	$1375
3 Machine Ami Link/CI System	$1750
4 Machine Ami Link/CI System	$CALL
2 Mach. Control (Future Video) Ami Link/CI Software	$355
For Future Video Software For Video Toaster Control	$145
Kitchen Sync	$1599

Transnational does not sell any refurbished products

VIDEO TOASTER SYSTEMS

25MHz 68030 ..... $4450
- A2500/30 + 7MB RAM
- 50MB Hard Drive

PLUS A1084S Monitor
PLUS Video Toaster

28 MHz 68040 ..... $5900
- A2000
- Pro 040/28MHz
- 9MB Of 32 Bit ROM Exp. To 16Meg.
- 105MB HD

PLUS A1084 S Monitor
PLUS Video Toaster 2.0

50MHz 68030 ..... $5800
- A2000 K/B + Mouse
- G-Force 030-50/8
- 105MB Hard Drive
- 2 Internal FD's

PLUS A1084 S Monitor
PLUS Video Toaster 2.0

AVAILABLE NOW! CD ROM TITLES FOR IBM/MAC

ONE YEAR WARRANTY ON PARTS & LABOR #1 SERVICE IN TOWN!

WE SUPPORT C-64 & C-128!
LARGEST SELECTION OF HARDWARE, SOFTWARE & ACCESSORIES!

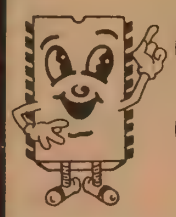
Prices subject to change w/out notice.

MasterCard VISA DISCOVER

57 FREEWAY · KRAEMER BLVD. · ORANGETHORPE · LA PALMA · 91 FREEWAY

MON-FRI 9-7
SAT. 9-6

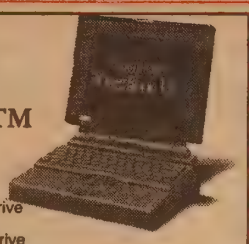
(BITS & PIECES COMPUTER PRODUCTS)
1130-A N. KRAEMER BLVD. (at La Palma and Kraemer Blvd.) ANAHEIM
(714) 630-8711 • 630-8644 • FAX 630-5619
Authorized Commodore Dealer and Repair



CHARLIE CHIP SAYS: "L.A. ♥" "

Apple® Authorized Reseller

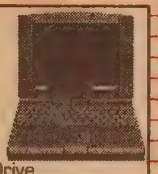
Apple® Macintosh® PowerBook™ 160 4/80



68030 25MHz CPU • 80MB Hard Drive
4MB RAM Expandable to 14MB
Internal Apple SuperDrive Floppy Drive
2 Expansion Slots: 1 for RAM,1 for Modem
SCSI Port, Supports 6 SCSI Devices
ADB Port • Video Port • Nickel-Cadium Battery
10" Backlit Supertwist Display • Built-in appletalk #1738281

$2449

Apple® Macintosh® PowerBook Duo™ 210 4/80



68030 25MHz CPU • 80MB Hard Drive
4MB RAM Expandable to 12MB
2 Expansion Slots • Serial Port
Docking Connector • Power Adapter Port
Modem Port • 9" Backlit Supertwist Display
Nickel-hydride Battery • Built-In Appletalk
#1738339

$1929

Apple® Macintosh® Quadra™ 950

The fastest most powerful Macintosh computer provides exceptional processing power.
68040 with Built-In Math Coprocessor
PMMU and 8K of Memory Cache
Running AT 33MHz • 8MB of RAM Expandable to 64MB
5 NuBUS Slots • Processor Direct
Slots support seven SCSI Drives
Built-In Appletalk and Ethernet
#1713545

$4999

Apple® Macintosh® Classic® II 4/40

68030 16MHz CPU
40MB Hard Drive
4MB of RAM Expandable to 10MB
Supports 7 SCSI Devices
Built-In Display • Appletalk Built-in
#1713497

$869

Apple® Personal LaserWriter® NTR

The Apple® Personal LaserWriter® NTR printer offers you exceptional value in a compact laser printer. It uses a high-speed RISC processor for faster printing speed and very fast first-page output. It offers high-performance PostScript™ Level 2 capabilities that allow you to produce high-quality graphics and text, and give you access to hundreds of fonts from both Apple and third-party vendors. And its ability to connect simultaneously to Macintosh® and IBM PC (or compatible) computers or networks makes it an excellent choice for small workgroups in multivendor computing environments. Printer card & toner.
#1714351

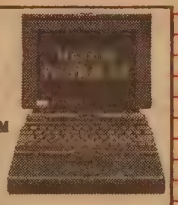
$1599

Apple® LaserWriter® Pro 630

Apple® Laserwriter® Pro 630. The perfect choice for high-performance, high-resolution printing.
• 25-MHz Motorola 68030 processor.
• 600 dots per inch resolution.
• Optional 300dpi plus PhotoGrade™
• 8MB memory expandable to 32MB
• 100 and 250 sheet tray
• Option 500-sheet cassette and 75-envelope feeder
• Comes with 64 scalable fonts
• All Macintosh products are design to work together.
#1757965

$2499.99

Apple® Macintosh® Powerbook™ 145 4/40



The Apple® Macintosh® PowerBook™ 145 computer is designed for those who want solid Macintosh performance and flexibility in a convenient, take-it-wherever-you-work notebook computer. Although it fits easily in your briefcase, this innovative notebook computer offers the full power and ease of Macintosh computing.
#1720866

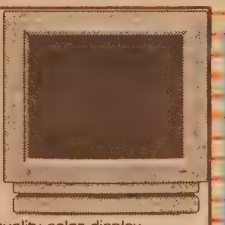
$1899

Apple® Macintosh® Quadra™ 700

608040 25MHz CPU
with built-in Math Coprocessor
4MB RAM Expandable to 20MB
2 NuBus Slots • 2 Serial Ports
2 ADB Ports
Video Port • Appletalk Built-In
Monitor And Keyboard Extra
#1650820

$2199

Apple® 14" Color Display



New, Low-cost, high-quality color display.
Provides both color and grey-scale capabilities.
Convenient tilt-and-swivel base for adjustable viewing angle.
14-inch (diagonal) screen
640 by 480 pixels; 70 dots per inch
66.7-hertz screen refresh rate
13.0 by 13.4 by 14.0 inch (HWD)
25.0 lbs. #1738513
#1738513

$599

Apple® Macintosh® Portrait Display

The Apple® Macintosh® Portrait Display is a high-resolution 15-inch monochrome display. It's ideal for work with desktop publishing, word processing, and general productivity applications. The full 8 1/2 x 11-inch page display shows a complete page of information just as it will appear in print. That makes it easy to preview and edit documents and add text or graphics. You'll also find that page layout of text and graphics will be more accurate and much more efficient. And you'll see clearly how the flatter screen and higher refresh rate can minimize flicker, and provide excellent focus for sharp, clear images and text.
#1714203

$799

Home of Fast, Friendly, Courteous Service

FRY'S ELECTRONICS

Prices good through March 15, 1993

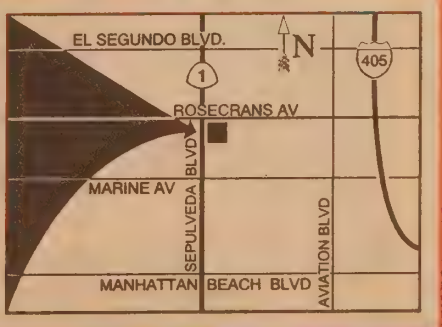
Limit Rights Reserved
Not Responsible For
Typographical Errors

STORE HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA AND MASTERCARD

MANHATTAN BEACH

3600 Sepulveda Blvd.
(310) 364-FRYS (3797)
CORP. P.O. FAX (310) 364-3700



386SX-25MHz
COMPUTER SYSTEM

80386SX 25MHz CPU • 2 Hard /2 Floppy Disk Controller
1MB RAM Expandable to 16MB • 3.5" 1.44MB Floppy Disk
101-Key Keyboard
Clock/Calendar
Case / Power Supply
#1659210

$279

486DLC-33MHz
105MB MINI TOWER SYSTEM
CYRIX 486DLC CPU

80486DLC 33MHz CPU • 1MB RAM Expandable to 32MB
2 Hard/2 Floppy Controller • 3.5" 1.44MB Floppy Drive
101-Key Keyboard • Clock/Calendar
IDE 19msec Access • 105MB Hard Drive
Case / Power Supply
#1763908

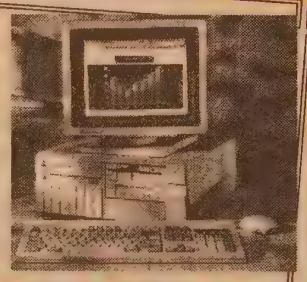
$699

486SX-25MHz
80MB SVGA SYSTEM

80486SX 25MHz CPU • 1MB Expandable to 32MB
3.5" 1.44MB Floppy Drive • 2 Hard/2 Floppy Controller • 80MB Hard Drive
1024 x 768 SVGA Card • VGA Adapter Card • 101-Key Keyboard
Clock/Calendar
MS DOS 5.0 • MS Windows 3.1
Monitor Sold Separately
#1737866

$749

LEADING EDGE
486SX-33MHz
107MB SYSTEM



80486SX 33MHz CPU • 107MB Hard Drive
2MB of RAM • 64K Cache
5.25" 1.2MB and 3.5" 1.44MB Floppy Drives
101-Key Keyboard • 1024 x 768 SVGA Adapter
1 Parallel/2 Serial Ports
MS DOS 5.0
MS Windows • Window Works
Monitor not included
#1748284

$1249

LEADING EDGE
386SL-25MHz
60MB NOTEBOOK

60MB Hard Drive
2MB of RAM • 32K Cache
3.5" 1.44MB Floppy Drives
VGA • Mouse
Serial/Parallel
MS DOS 5.0
Window Works #1757666

$1199

T1800 TOSHIBA
386SX-20MHz
60MB NOTEBOOK

80386SX 20MHz
60MB Hard Drive
3.5" 1.44MB Floppy Disk Drive
2MB RAM Serial/Parallel Ports
VGA Output
#1722466

$1299

486SLC
25MHz
120MB NOTEBOOK

LIGHTWEIGHT ONLY 8 lbs.

WYSE

486SLC 25MHz • 120MB Hard Drive
3.5" 1.44MB Floppy Disk Drive
4MB RAM Serial/Parallel Ports
VGA Output • MS DOS 5.0
MS Windows

#1737408

$1799

LOCAL BUS VESA MOTHERBOARDS

All include CPU

486DLC-33MHz $299.95
#1751844

486SX-33MHz $449.95
#1757699

486DX-33MHz $549.95
#1754962

486DX2-66MHz $899.95
#1754973

486DX2-66MHz EISA/LOCAL BUS/ISA
#1763791
$999.95

KX-P4410 LASER PRINTER

Panasonic Office Automation OA

5 Pages Per minute • 300 DPI
512K RAM Expandable to 4.5MB
Bitmap Fonts • 200 Sheet Paper Tray
Multi-Purpose Cassette
#1659047

$628

Fry's is an authorized Panasonic O/A service facility.

EPSON ActionPrinter™ 3250
9 PIN IMPACT DOT MATRIX PRINTER

50 Sheet Paper Cassette Tray
240 CPS Draft, 48 CPS NLQ
Quiet • 2 Year Warranty
#1729120

$138.95

Charlie Chip Says:
"Your Best Computer Buys Are Always At..."

FRY'S ELECTRONICS

DATA CARTRIDGES

DC600A UNFORMATTED DATA CARTRIDGES
#1623684
$16.95

2120 UNFORMATTED DATA CARTRIDGES
#1708514
$16.95

1024 X 768 NON-INTERLACED 14" SUPER VGA MONITOR
1024 X 768
.28 Dot Pitch • Non-Interlaced
One year Warranty #1763148
$339.95

1280 X 1024 24-BIT SUPER VGA CARD
16 Million Color Capable
1280 x 1024 Max Resolution
Windows Accelerator VESA 72Hz
$99.95
#1750485

1024 X 768 INTERLACED MEGA IMAGE 14" SUPER VGA MONITOR
1024 X 768 • .28 Dot Pitch
Interlaced #1763171
$288

1024 X 768 NON-INTERLACED 20" SUPER VGA MONITOR
1024 X 768 • Non-Interlaced .31 Dot Pitch
Flat Screen • INVAR Shadow Mask
70HZ Refresh VESA • 20" Large Screen
SAMPO KDM-2055 #1691764
$1299

ADTECH 2400 BAUD MODEM 9600 BAUD SEND RECEIVE POCKET FAX MODEM
Fully featured Send and Receive
Windows and DOS drivers #1732872
$99.99

TyIN 2000
DATA MODEM
- Up to 9600bps with v.42bis over 2400bps data transmission.
- Data compression with v.42bis and MNP2-4. • Hayes compatible.

ANSWERING MACHINE
- Unlimited mail boxes and messages (limited only by available disk space).
- Digital voice compression.
- Full call progress and message monitoring.
- Remote message retrieval
- Fax-and-touch-tone detection in parallel with outgoing message.
- Time/dating stamping.
- Memo recording.

#1743887
National Semiconductor COMPUTER ENHANCEMENT GROUP
$219

CREATIVE
CREATIVE LABS, INC.
The All-In-One Multimedia CD-ROM Solution for the PC
SOUNDBLASTER Pro
CD-ROM Drive MIDI Kit
Multimedia Software
MPC Multimedia PC
Microsoft Windows 3.1. Includes Micromedia Action, AuthorWare Star, Mathematica Tempra, Microsoft Bookshelf and Works, and Creative/Prosonus Sounds Disk and Sherlock Holmes Consulting detective. Includes Sequencer Plus Pro.
#1632550
$549.99

120MB TAPE BACK-UP
COLORADO MEMORY SYSTEMS INC.
40/60/120MB FORMAT
Back up any size drive from 40MB to 120MB
Runs off Floppy Disk Controller
Internal XT/AT Drive DJ-10 #1498817
$199.95

120MB IDE HARD DRIVE
19 msec Access
IDE Hard Drive
#1746868
$229

TYPIST PLUS GRAPHICS
The Typist Plus graphics solution is complete - the finest OCR available and complete image editing software. This Windows and DOS compatible hand held scanner can read text and numbers directly into your word processor, spreadsheet or DTP application. And Typist Plus can scan and edit images with The Graphic Editor. 256 Greyscales through software interpolation.
$299.99
CAERE
#1637108

FIRST MOUSE
FIRST IN CONVENIENCE, FIRST IN QUALITY AND FIRST IN ECONOMY
Three programmable buttons offer you maximum flexibility. Includes Mouse Software for extra convenience. Guaranteed to work with all your applications #1604667
$39.99
LOGITECH

DESKTOP COMPUTER CASE WITH POWER SUPPLY
DT-PP #1758379
$59.95

MINI TOWER COMUTER CASE WITH 200 WATTS OF POWER
#1742428
$69.95

IDE CACHE 512K IDE FLOPPY/HARD CONTROLLER
WITH CACHE 512K
EXPANDABLE TO 8MB
#1716995
$159.95

Give Your Mouse a Place to Roam
MOUSE PAD
9" X 8" In Assorted Colors
#1563663
$1.99

WRIST PAD
2 LAYER PAD AVAILABLE IN ASSORTED COLORS
#1711934
SILICON SPORTS
$4.99

LOST FOR SPACE?
UNDERDESK KEYBOARD DRAWER
Space saving way to hold keyboard securely under the desk. #1695827
$14.99

JUMBO 250MB TAPE BACK-UP
40/80/120/250 MB Format
Internal Drive runs off floppy controller
USES DC-2000 TAPES
Model DJ-20
#1747788
COLORADO MEMORY SYSTEMS INC.
$229

HOME OF FAST, FRIENDLY, COURTEOUS SERVICE

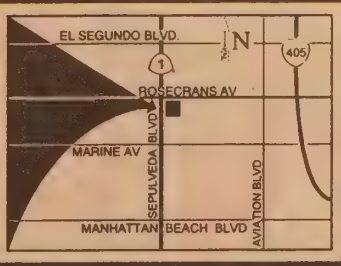
FRY'S ELECTRONICS

Limit Rights Reserved
Not Responsible For
Typographical Errors

Prices good thru
March 15, 1993

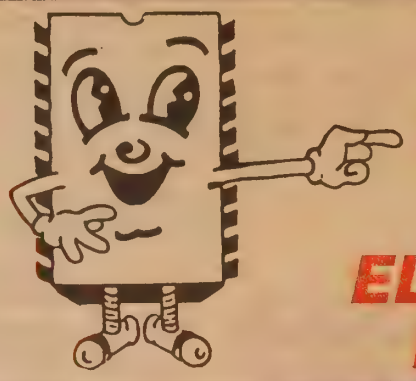
STORE HOURS
MON - FRI
8AM - 9PM
SATURDAY
9AM - 8PM
SUNDAY
9AM - 7PM

MANHATTAN BEACH
3600 Sepulveda Blvd.
(310) 364-FRYS (3797)
CORP. P.O. FAX (310) 364-3700



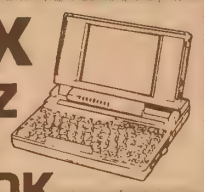
VISA
MasterCard
VISA and MasterCard - Accepted

Fry's ELECTRONICS



SEE OVER 10,000 ELECTRONIC ITEMS AT LOW, LOW PRICES!

386SX 20MHz 80MB NOTEBOOK



80386SX 20MHz
80MB Hard Drive
3.5" 1.44MB Floppy Disk Drive
2MB RAM • Serial/Parallel Ports
VGA Output • 2 Hr. Battery
#1752753

$999

386SX-25MHz 80MB NOTEBOOK

80386SX 25MHz • 80MB Hard Drive
3.5" 1.44MB Floppy Disk Drive
2MB RAM • Serial/Parallel Ports
VGA Output • 2.5Hrs Battery
#1756609

$1099

486SLC-25MHz 80MB NOTEBOOK

80486SLC 25MHz • 80MB Hard Drive
3.5" 1.44MB Floppy Disk Drive
2MB RAM • Serial/Parallel Ports
VGA Output • 10" LCD • 2 Hr. Battery
#1750968

$1799

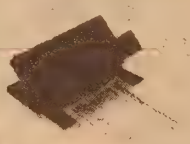
HEWLETT PACKARD Authorized Dealer

DeskWriter 550C Color InkJet Printer

COLOR INKJET OUTPUT AT 300 DPI!
Prints in Color or Black and White at the same time. • Localtalk Interface
100 Sheet Paper Feeder
Whisper Quiet • 3 Year Warranty
35 Scalable fonts • Bulit-in spooler
#1733699

$693.95

HEWLETT PACKARD Authorized Dealer

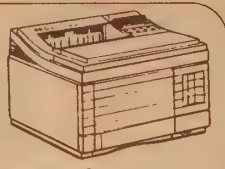


DeskJet Portable Inkjet Printer

300 DPI portable printing for both text and graphics Fast- up to 3 pages per minute Small, lightweight and easy to carry. Four portrait and two landscape typefaces built-in. 84 typefaces, size and style combinations.

$389.95 #1733714

HEWLETT PACKARD Authorized Dealer



LaserJet 4

Fast 8ppm printing for complex documents
45 Scalable Fonts • 2MB RAM
600 DPI Print Quality at a 300 DPI Price
300 Page Paper Capacity
Ideal for Windows and Graphics
Optional Full Network Capabilities
#1734140

CALL FOR BEST PRICE!

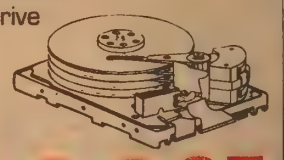
TurboTax

1040 FINAL EDITION 1992
Discover the New EasyStep- System.
Introducing EasyStep.. a revolutionary new tax preparation system that leads you through your tax return from start to finish... guides you every step of the way... and completes the return for you automatically.More than just an interview or tutorial, EasyStep is a whole new way to do your taxes.
And only TurboTax has it. ChipSoft, Inc.
State Cal. DOS 1992 #1765208 *27**

$42.95 DOS #1762918

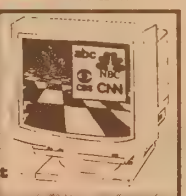
105MB IDE HARD DRIVE

16 msec Access
IDE Hard Drive
#1733574



$199.95

DESKTOP TV



Full Screen EDTV on your own monitor!
Twice as sharp as present TV sets
119 channels cable ready
PC-TV one touch switching
Audio monitoring mode
Fits in any AT/386/486 Standard Expansion Slot
#1703597

VISIONEX

$199.95

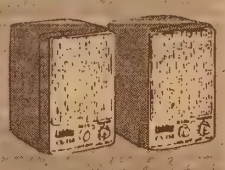
Perfect Portable Presentation Peripheral! AUDIO PORT

- Perfect For Mobile Presentation
- Connects to standard Parallel Port
- Jacks For Microphone and Auxilliary Speakers
- 2-22KHz Sampling Rate
- Internal Battery Or +6VDC Adapter Included #1679571

$139

MEDIA VISION

SHIELDED COMPUTER SPEAKERS



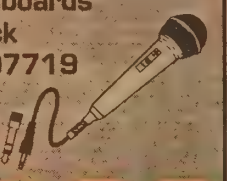
High efficiency micro stereo speakers Built-In power booster (4, "c" size batteries not included) Individual volume controls • DC 6 volt input jack 3.5mm stereo plug
CS-150 #1664001

Labtec.

$18.99

MICROPHONE

600 OHM Microphone for voice input to computers. Fits all soundboards with input jack
AM-22 #1707719



Labtec.

$9.99

Home of Fast, Friendly, Courteous Service

Fry's ELECTRONICS

Prices good through March 15, 1993

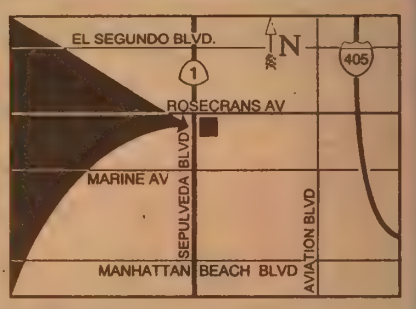
Limit Rights Reserved
Not Responsible For Typographical Errors

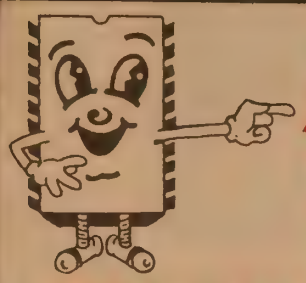
HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA AND MASTERCARD

MANHATTAN BEACH

3600 Sepulveda Blvd.
(310) 364-FRYS (3797)
CORP. P.O. FAX (310) 364-3700





Fry's ELECTRONICS

ONE STOP SHOPPING FOR THE HI-TECH PROFESSIONAL!

IBM PS/1 EXPERT Intel 486™ SX-25MHz

AT BUS

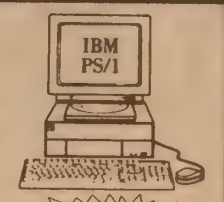
129MB Hard Drive • 4MB RAM
3.5" 1.44MB Floppy Drive
3 AT® Slots
IBM 14"VGA Color Monitor
IBM Mouse & Keyboard
2400 bps Internal Modem
• **Novell® certified**
• **IBM Quality and Reliability**
The PS/1 Expert is built to IBM's exacting standards for quality and reliability.
MODEL 2133-S53 #1735820

*IBM and Personal System/1are registered trademarks of International Business Machines Corporation.

All You Need In One Box!

• **Preloaded Software**
IBM DOS 5.0
Microsoft® Windows™ 3.1 Tutorial,
IBM PS/1 Index
MS Works for Windows
• PRODIGY®
Fitness • Virus check, Promenade℠ • •
Address Book Plus®

• **Support and Service**
The exclusive online PS/1 Club™ answers your computing questions 20 hours a day, 365 days a year.



VGA DISPLAY INCLUDED!

$1499

IBM PS/1 EXPERT Intel 486™ DX-33MHz

AT BUS

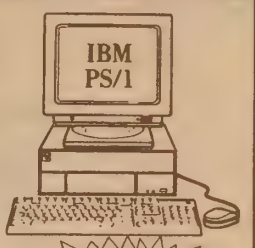
211MB Hard Drive • 8MB RAM
Expandable to 32MB
3.5" 1.44MB Diskette Drive
5 1/4" 1.2 MB Floppy
5 AT® Slots and 3 Drive Bays
IBM 14" SVGA Color Monitor
IBM Mouse & Keyboard
2400 bps Internal Modem
• **Novell® certified**
• **IBM Quality and Reliability**
The PS/1 Expert is built to IBM's exacting standards for quality and reliability.
MODEL 2155-S76 #1705418

*IBM and Personal System/1are registered trademarks of International Business Machines Corporation.

All You Need In One Box!

• **Preloaded Software**
IBM DOS OS/2 2.0
Microsoft® Windows™ 3.1 Tutorial,
IBM PS/1 Index
MS Works for Windows
• PRODIGY®
Fitness • Virus check, Promenade℠ • •
Address Book Plus®

• **Support and Service**
The exclusive online PS/1 Club™ answers your computing questions 20 hours a day, 365 days a year.

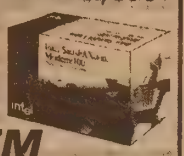


SUPER VGA DISPLAY INCLUDED!

$2399

Intel SatisFAXtion Modem/100

Data. Fax. Great software.



INTERNAL 2400 BAUD MODEM 9600 BAUD FAX

DOS/Windows
Crosstalk Communication Software
#1699647

$99.95

TOSHIBA T3300SL 25MHz 386SL

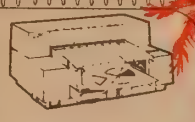
FREE 2MB RAM UPGRADE!

80386-SL • 25MHz • 120MB HARD DRIVE 3.5"
1.44MB Floppy Disk Drive
2MB RAM • Serial/Parallel
VGA Output • PS/2 Port
Power Management Capabilites #1707409

*After factory mail-in rebate. In-store price $2149. Offer good until February 28, 1993

$1999*

HEWLETT PACKARD Authorized Dealer



DeskJet 500C

Color InkJet Printer

COLOR INKJET OUTPUT AT 300 DPI!

Prints in Color or Black and White
100 Sheet Paper Feeder • Whisper Quiet
3 Year Warranty
#1632480

$514.95

HEWLETT PACKARD Authorized Dealer

LaserJet IIIP

Resolution Enhancements Yield The Highest Quality Laser Output!
8 SCALABLE Fonts • 14 Bit-Mapped Internal Fonts •1MB RAM
4 Pages/Minute • Serial/Parallel
Postcript Upgradeable #1584062

$925.95

Panasonic Office Automation

KX-P2180 9-PIN PRINTER

QUIET PRINTER TECHNOLOGY

9 Pin • 80 Columns • 192 CPS
38 CPS NLQ • 6 Built In NLQ Fonts
240x 216 DPI Resolution
Push-Pull Tractor • Optional Color
#1658714

$157.95

MacInTax 1040 FINAL EDITION 1992

MacInTax gives you total control over completing your tax return. Its convenient status bar lets you click on a button and jump right to the tax help you need. It imports figures from Quicken, and other financial software packages. It's System 7 compatible and includes balloon help.

State California #1765221 $27.95 ChipSoft, Inc.

$42.95

MAC #14763872

COAX TO 10 BASE T CONVERTER

MVL901 CONVERTS COAX TO 10 BASE T WITH LED DISPLAY
#1687376

$59.95

AVOID SYSTEM MELTDOWN

AMERICAN POWER CONVERSION

7 OUTLET SURGE ARREST
240 Joules Dissipation
Reduce Intermittent Lock Ups & Parity Errors With EMI/RFI Filtering
#1651256

240 JOULES!

American Power Conversion

$1000 EQUIPMENT WARRANTY!

$19.99

DETER DATA DISASTER

BACK UPS 250

Modified Sine wave output safer for all equipment types than square wave
250 Volt/AMP Backup Power Supply
2 Outlet • EMI/RFI filtering
10 Minutes Back-Up At 250VA
#1651164

$10,000 EQUIPMENT WARRANTY!

American Power Conversion

$109.99

60MB EXTERNAL SCSI HARD DRIVE FOR MACINTOSH

28MS BY MICROTECH #1751660

$399

Home of Fast, Friendly, Courteous Service

Fry's ELECTRONICS

Prices good through March 15, 1993

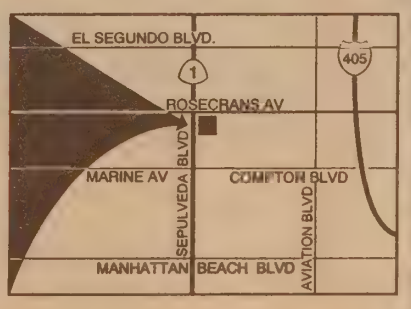
Limit Rights Reserved
Not Responsible For Typographical Errors

STORE HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA AND MASTERCARD

MANHATTAN BEACH

3600 Sepulveda Blvd.
(310) 364-FRYS (3797)
CORP. P.O. FAX (310) 364-3700



PRODUCT SPOTLIGHT

New Products

LAPTOP COMPUTERS

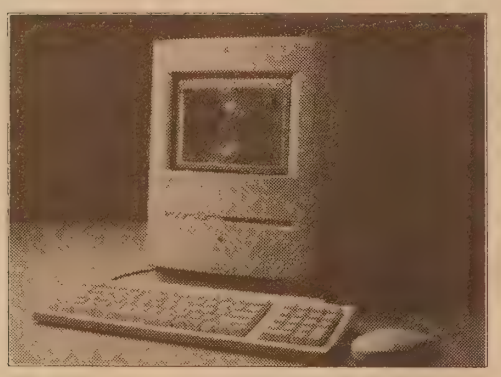
AMREL 486 NOTEBOOK

The Amrel MLT486DXU-33 offers a standard-spaced keyboard and a convenient built-in trackball. It comes with an Intel 486DX-33 upgradable to a DX2/66, 4MB of RAM expandable to 16MB, and an 80MB hard drive with 120MB, 180MB, and 200MB hard drives optional. Also included as standard is a 3.5" 1.44MB floppy drive, backlit 10" VGA supertwist display, and docking station bus connector. The available docking station is designed similar to the Macintosh PowerBook Duo notebook computers. The Amrel notebook also comes with a slot for an internal fax modem; serial, parallel, and keyboard ports; advanced power management; and a rugged carrying case. ($2595) Amrel Technology, Inc., 9952 E. Baldwin Place, El Monte, CA 91731. 1-800-882-6735, (818)304-0882.

MACINTOSH HARDWARE

MACINTOSH COLOR CLASSIC

The new Color Classic offers exceptional color, greater expandability, Macintosh LC expansion capability, and an energy-saving feature. Built around a 16MHz 68030 microprocessor and a 10" Sony Trinitron display, the Color Classic supports 256 colors with 512 x 384 pixels and comes standard with 4MB of RAM, a 40MB internal hard drive, keyboard, mouse, built-in microphone, and power on/off from the keyboard. The Color Classic is the first Apple desktop computer that automatically reduces power consumption to less than 25 watts when it is idle. ($1389) Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. (408)996-1010.



Continued on page 98

PRODUCT UPDATES

➤**Ares** released **FontMonger 1.5**, a new version of its font conversion and modification utility for the Macintosh. Existing owners can upgrade to v1.5 for $49.95. Ares Software Corp., 561 Pilgrim Dr., Suite D, Foster City, CA 94404. (415)578-9090.

➤**Attain** released **In Control v2.0**, its To-Do List Manager for Macintosh computers. Bundled with In Control is a free copy of DynoPage Lite, a printing utility from Portfolio Software that lets users preview printed pages on screen and print pages for Day Timer, Day Runner, Filofax, Franklin, and other popular planners. Attain Corp., 48 Grove St., Sumerville, MA 02144. (617)776-1110.

➤**ColorAge** released **Freedom of Press for Windows.** The new version will enable users to print high-quality PostScript fonts and graphics and allow users to convert PostScript files to DCX and PCX formats for higher-quality output from fax applications. ColorAge, Inc., 900 Technology Park Dr., Billerica, MA 01821. (508)667-8585.

➤**Dantz Development** announced v2.0 of their Macintosh backup programs, **Retrospect** and **Retrospect Remote.** Highlights include an all-new interface, improved performance, and additional capabilities. Dantz Development Corp., 1400 Shattuck Ave., Berkeley, CA 94709. (510)849-0293. AppleLink: DANTZ.

➤**Lotus** is shipping **cc:Mail Remote for Macintosh v2.0.** The new version allows remote users of Apple PowerBook computers or other standalone Macintosh computers to easily communicate with cc:Mail users operating Macintosh, MS-DOS, Windows, OS/2, UNIX, or any combination of these platforms. Lotus Development Corp., 55 Cambridge Pkwy., Cambridge, MA 02142. (617)577-8500.

➤NEC announced it would include a **free three-year, on-site parts and labor limited warranty** on all Silentwriter laser printers and genuine NEC printer options, excluding replacement consumables, purchased January 1, 1993, through March 31, 1993. NEC Technologies, Inc., 1414 Massachusetts Ave., Boxborough, MA 01719-2298. (508)264-8000.

➤**SPSS/PC+ 5.0** is shipping. The new version of this statistical package for DOS offers extended memory, dramatically improved performance, and close links to a new analytical and business charting module, SPSS/PC+ Graphics from TriMetrix. SPSS, Inc., 444 N. Michigan Ave., Chicago, IL 60611-3962. 1-800-543-2185.

➤**Triangle Software**, a division of Datawatch Corp., announced **Virex for the PC v2.3.** Version 2.3 offers over five hundred new explicit virus detectors and includes the ability to send virus alerts to Novell NetWare consoles. Datawatch Corp., 3700-B Lyckan Pkwy., Durham, NC 27707. (919)490-1277.

" *Invest your money Wisely* "
From the member of
The Better Business Bureau

On Site Service
Delivery & Setup
Training
Technical Support
Installation
Money Back Guarantee

(Intel) ATC 486DX-33Mhz

Reg. ~~$2129~~

$999

Lowest Price Ever

intel inside

Intel 486DX-33 CPU
AMI Programmable BIOS
4MB of Ram memory 60ns
1.2MB & 1.44MB Floppy Drives
105MB IDE Hard Drive
2 Serial 1 parallel 1 Game
101 Enhanced Key Board
VGA 16 bit Video Card
VGA 14" 256 grayscale Monitor
Desktop Case w/ 200w P.S.

GREATEST VALUE

We do TRADE-IN & UPGRADE

MOTHER BOARD	QT.10
386sx-40 w/ cpu & 64k	$95
386dx-33 w/ cpu & 64k	$159
386dx-40 w/ cpu & 64k	$165
486sx-25 w/ cpu & 64k	$225
486dx-33 w/ Cyrix cpu & 64k	$265
486dx-33 w/o cpu, 64k	$110
486dx-50 w/o cpu. 256k	$130
486dx-66 w/o cpu, 256k	$130
486dx-33 Local Bus, 64k	$165
486dx-50 Local Bus, 64k	$165

CASE & POWER SUPPLY	
Full size tower case w/ p,s.	$90
Mini Tower case w/ p.s.	$55
Desktop case w/ p,s,	$55
200w power supply	$45
250w power supply	$45

DISK DRIVE	QT.10
Conner IDE 85MB	$195
Conner IDE 125MB	$215
Conner IDE 175MB	$275
Fujitsu IDE 500MB	$865
Western Digital 85MB	$175
Western Digital 210MB	$310
Western Digital 340MB	$535
Mitsumi 5.25" 1.2MB F.D.	$47
Mitsumi 3.5" 1.44MB F.D.	$45

C D ROM DRIVE	
Mitsumi 340ms C.D.	$205
Sony C315A C.D.	$245

VIDEO CARD	
Trident 512K SVGA	$39
Trident 1MB SVGA	$55
Oak 1MB windows Accerlator	$75
Diamond Stealth 24x 1MB	$145

MONITOR	QT.10
CTX 14" .28m SVGA	$240
CTX 14" .28m NI SVGA	$270
CTX 15" 1560 .28 SVGA	$440
CTX 17" 1760 .28 SVGA	$790
Ether 14" .28 SVGA	$235
Ether 14" .28m NI SVGA	$270
MGC 14" .41m VGA	$190
MGC 14" .39m SVGA	$205
MGC 14" .28m SVGA	$235
MGC 15" .28 SVGA	$385

PRINTER	
Hewlett Packard DJ 500	$375
Hewlett Packard IIP plus	$775
Hewlett Packard Laser 4	$1345
Panasonic 4410 Laser	$630

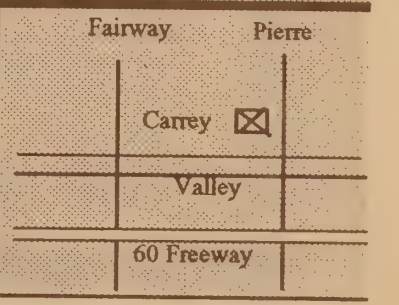
SCANNER	
Plustek Color scanner 300	$380

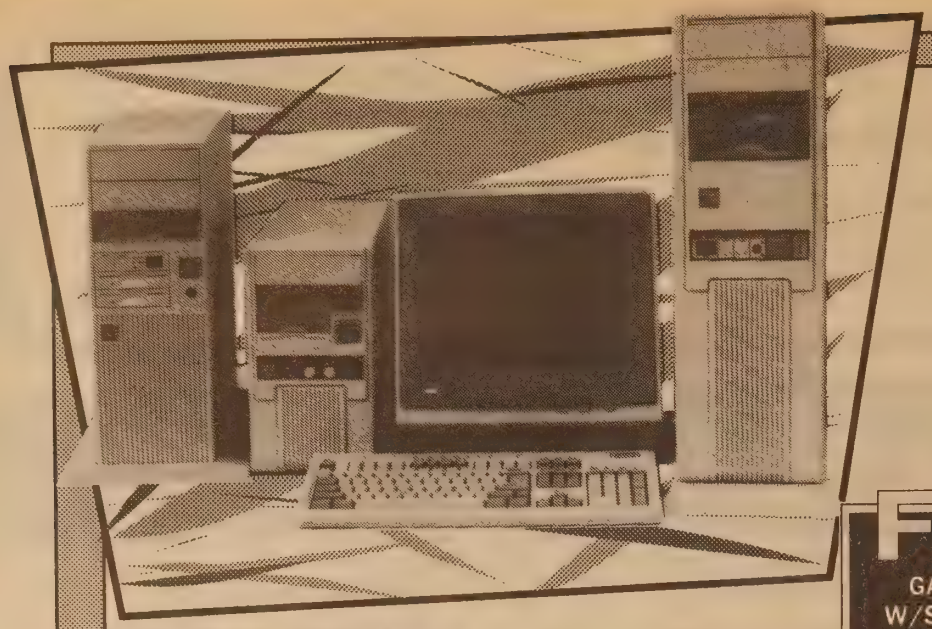
PRICE: Add 6% if purchased quantity is less than 10 ea. per item, except system, also subject to change w/o notice

Vertical Enterprises Inc.

Computer Division
20844 Carrey Road, Walnut Ca 91789
Fax: (909)595-1745

Call (909)595-5733





SHOPPING FOR THE

SYSTEMS PLAC

FREE!!
GAMES & SOUND BOARD
W/SPEAKER FOR ALL 386DX
& 486 SYSTEMS

486 EISA & VESA L.B. System

- 486 CPU w/64K Cache (Upgrade to 256K)
- 4MB RAM
- 1.44 Floppy Dr.
- 16 Bit Dual (1:1) HD/FD Controller
- AT I/O Card
- 101 Enhanced Keyboard
- Vertical Case & Power Supply
- SVGA 1MB Card & SVGA Monitor
- 120MB Hard Drive

33MHz EISA VLB $1450
50DX2 EISA VLB $1525
50DX EISA VLB $1650
66DX EISA VLB $1750

VL GENOVA SVGA Card High Color	$185
VL ET-4000 SVGA Card w/1MB	$145
VL IDE Cache Controller w/1MB	$250
VL IDE Controller Card	$70
120MB Up To 210MB	$125
SVGA .28dp Up To VESA Monitor	$70

***EISA VESA LB Motherboard-10 Slot 5x16 Bit ISA, 32x32 Bit EISA, 2x32 Bit VLB**

80386-33/40 MHz System

- 4 MB RAM w/64K Cache
- 1.44 Floppy Dr.
- 200 W. Power Supply
- 16 Bit Dual (1:1) HD/FD Controller
- AT I/O Card
- 101 Enhanced Keyboard
- Mini Tower Case
- SVGA Monitor & SVGA 512K
- 120 MB Hard Drive

$935/$945

486-50/66 MHz Cache System

- Intel 486 DX2 with 256K Cache
- 4 MB RAM
- 1.44 Floppy Dr.
- 16 Bit Dual (1:1) HD/FD Controller
- AT I/O Card
- 101 Enhanced Keyboard
- AT Vertical Case with 230W P.S.
- SVGA Monitor & SVGA 1MB Card
- 120 MB Hard Drive

OPTION CPU Fan Cooler $20

$1399/$1530

486 VESA Local Bus System

- 486 CPU w/64K Cache (Upgrade to 256K)
- 4MB RAM
- 1.44 Floppy Dr.
- 16 Bit Dual (1:1) HD/FD Controller
- AT I/O Card
- 101 Enhanced Keyboard
- Vertical Case & Power Supply
- SVGA 1MB Card & SVGA Monitor
- 120MB Hard Drive

33MHz VESA LB $1275
50DX2 VESA LB. $1375
50DX VESA LB. $1450
66DX VESA LB. $1500
33 MHz DLC VESA LB $1175
40 MHz DLC VESA LB $1350

PRO-SERIES Local Bus 486-66 System

- 486DX-66MHz VESA Std. Local Bus M/B
- 16MB RAM
- 1.44 Floppy Drive
- IDE Controller with I/O
- AT Full Size Case w/Power Supply
- Dual Fan On The System
- 101 Enhanced Keyboard
- 32 Bit VESA Std. SVGA w/1M Card
- 14" VESA Std. Mont. (1280x1024, Res. 72Hz)
- 210MB Hard Drive

$2139

486SX-25/33 MHz Cache System

- Intel 486 CPU w/cache
- 4 MB RAM
- 1.44 Floppy Dr.
- 16 Bit Dual (1:1) HD/FD Controller
- AT I/O Card
- SVGA Monitor & SVGA 512K Card
- AT Vertical Case with 230W P.S.
- 101 Enhanced Keyboard
- 105 MB Hard Drive

$999/$1089

386SX-25/33/40 MHz System

- 2 MB RAM
- 1.44 Floppy Dr.
- 200 W. Power Supply
- 16 Bit Dual (1:1) HD/FD Controller
- AT I/O Card
- 101 Enhanced Keyboard
- Mini Vertical Case
- VGA Monitor & VGA Card
- 105 MB Hard Drive

$739/$749/$759

486-33 MHz Cache Sys

- 486 CPU with 64K Cache
- 4 MB RAM
- 1.44 Floppy Dr.
- 16 Bit Dual (1:1) HD/FD Controller
- AT I/O Card
- 101 Enhanced Keyboard
- AT Vertical Case with P.S.
- SVGA Monitor & SVGA 512K Card
- 120MB Hard Drive

OPTION CPU Fan Cooler $20

$1089

Computix

COMPUTER UPGRADE

3480 W. Warner #E
Santa Ana, CA 92704

Tel (714) 540-5131
Fax (714) 540-5139

"BEST QUALITY" AT THE "LOWEST PRICE"?

FOLLOW US!

RU
FIC
GE
FT

COMPONENTS COURT

RU
FIC
RGE
HT

MOTHERBOARD

486-66MHz M.B. w/256K Cache	$850
486DX2-50MHz M.B. w/256K Cache	$605
486-50MHz M.B. w/256K Cache	$690
EISA VLB 486-33MHz w/256K Cache	$700
EISA VLB 486-50DX2, 50DX w/256K	$780/$850
EISA VLB 486-66MHz w/256K	$880
Local Bus VESA Std. 486-33MHz w/256K	$525
Local Bus VESA Std. 486-66MHz w/256K	$810
Local Bus VESA Std. SX 486-33MHz w/64K	$950
486-50MHz EISA 256K exp. to 512K Cache	$850
486-33MHz EISA 256K exp. to 512K Cache	$700
486-33MHz M.B. w/64K, 256K Cache	$495/$525
Cyrix 486-33MHz M.B. 64K, 256K Cache	$325/$395
486SX-25MHz w/64K Cache M.B.	$235
386-40MHz Motherboard w/64K Cache	$175
386-33MHz Motherboard w/64K Cache	$165
386-25MHz Motherboard	$155
386SX-25MHz Motherboard	$99
386SX-33/40MHz Motherboard	$105/125

ADD-ON CARD

Monographic Printer Port	$12
VGA 16 Bit Card with 256K (800x600)	$29
SVGA Card with 512K (1024x768)	$59
SVGA Card with 1 MB (1024x768x256 Color)	$69
Orchid Farenheit 1280 1 MB VGA Card	$205
Speedstar STEALTH VRAM VGA Card	$205
Speedstar 24X High Color VGA Card	$168
ATI Ultra VGA Card 76Hz w/Bus Mouse Port	$289
ET-4000 VESA LB Card	$125
Genova VESA LB VGA Card	$145
Cirrus Logic VL 1MB Upgrade To 2MB	$155
AT I/O Card (2S. 1P. 1G.)	$12
IDE HD & FD Controller	$14
IDE HD & FD & I/O Controller	$19
IDE 4 Floppy Drive & Hard Drive Controller	$25
IDE 32 Bit VESA Std. Local Bus w/1M Controller	$260
IDE 16 Bit 512K Cache Controller up to 8MB	$115
ESDI HD & FD Controller	$135
SCSI HD & FD Controller	$110
MFM/RLL HD & FD Controller	$45/55
XT MFM/RLL HD Controller	$35/45

HARD DRIVE

Maxtor/Seagate/Western Digital 40 MB HD	$155
Maxtor/Seagate/Western Digital 80 MB HD	$185
Maxtor/Seagate/Western Digital 100 MB HD	$199
Maxtor/Seagate/Western Digital 125 MB HD	$245
Maxtor/Seagate/Western Digital 210 MB HD	$345

PRINTERS

CALL!

MONITOR KIT SET

VGA Monitor (640x480) VGA 16 Bit Card with 256K	$240
Super VGA Monitor (1024x768 .28dp) Super VGA Card with 512K	$285
Super VGA Monitor (1024x768 .28dp) Super VGA Card with 1 MB	$310
Non-Interlaced Monitor (1024x768 .28dp) Super VGA Card with 1 MB	$350
17" IDEK MultiScan Monitor (1280x1024 Res.) Speedstar STEALTH VRAM Card	$1270

CASES

Mini Tower Case with Power Supply	$55
Mid Size Tower Case with Power Supply	$75
Full Size Tower Case with Power Supply	$105

SOUND CARD

Media Concept Sound Card (Sound Blaster 2.0 Compatible)	$65
FAN for all 486 CPU	$20
Sound Blaster PRO	$179

MONITOR

14" VGA (640x480)	$215
14" Super VGA Monitor (1024x768)	$255
14" Non-Interlaced SVGA Monitor .28dp	$295
14" VESA Std. SVGA Mont. 1280x1024	$305
17" KFC Monitor .26dp 1280x1028	$869

KEYBOARD

101 Enhanced Non Click Keyboard	$23
101 Enhanced Click Keyboard	$26
101 Enhanced SuperClick Keyboard	$29
FOCUS 8000 Keyboard	$55
FOCUS 9000 Keyboard	$72

FLOPPY DRIVE

Mitsumi 1.2 Floppy Drive	$52
Mitsumi 1.44 Floppy Drive	$49
TEAC 1.2 Floppy Drive	$55
TEAC 1.44 Floppy Drive	$54

NETWORK CARD

Ethernet 8/16 Bit Card	$89/99
ARCNet 8/16 Bit Card	$65/70

MOUSE

MOUSE Hi-Res	$18
MOUSE CP-3	$10
TRUEDOX TRACKBALL	$25

FAX & MODEM

Internal 2400B Modem	$35
Internal 9600 Fax 2400B Modem	$49
Smart One Fax 9600 2400B Modem	$59

TAPE BACKUP

Colorado Tape Backup DJ-10 120 MB	$195
Colorado Tape Backup DJ-20 200 MB	$249

MULTI-MEDIA UPGRADE KIT

- CD-ROM Drive, Sound Blaster Pro Card
- Library Of Software (Microsoft) Windows 3.1
- Microsoft Bookshelf, MicroMind Action, Authorware Star, Mathmatica Tempra, Sherlock Holmes

$495

BASIC SYSTEMS

BELOW SYS. w/1MB RAM, 1.44 FLOPPY, KEYBOARD

Basic Sys. 286-16 MHz	$225
Basic Sys. 286-25 MHz	$235
Basic Sys. 386SX-25 MHz	$269
Basic Sys. 386SX-33 MHz	$295

BELOW SYS. w/4MB RAM, 1.44 FLOPPY, KEYBOARD

Basic Sys. 386-25 MHz	$435
Basic Sys. 386-33 MHz w/64K	$470
Basic Sys. 386-40 MHz w/64K	$475
Basic Sys. 486SX-25 MHz w/64K	$500
Basic Sys. 486-33 MHz w/64K $710 ... with 256K	$740
Basic Sys. Cyrix 486-33 MHz w/64K $590 ... with 256K	$660
Basic Sys. 486-50DX MHz w/256K	$1015
Basic Sys. 486DX2-50 MHz w/256K	$915

Includes Case, Power Supply, Motherboard

TERMS AND CONDITIONS

- 1 Year Warranty (Parts & Labor)
- Prices Are Subject To Change Without Notice
- Defective Merchandise Must Have RMA Authorization
- 15% Restocking Charge
- Terms COD or Prepaid (Cashier Ck, Company Ck, OAC)
- All Systems 14 Day Money Back Guarantee
- Quantity Discount Available
- Tech. Support: (818) 579-1446

TSC U.S. Turbo System
1819 N. Floradale Ave.
So. El Monte, CA 91733
Tel (818) 579-2405
Tech. Support (818) 579-1446
FAX (818) 579-9572

D.S.C.
DATA SOLUTION COMPUTER
1928 Tyler, Suite A-168 •
So. El Monte, CA 91733
Tel (818) 454-1039
Fax (818) 454-1040

Office Hours:
Monday Thru Friday
9:00 AM – 6:00 PM
PRICES GOOD w/THIS AD!

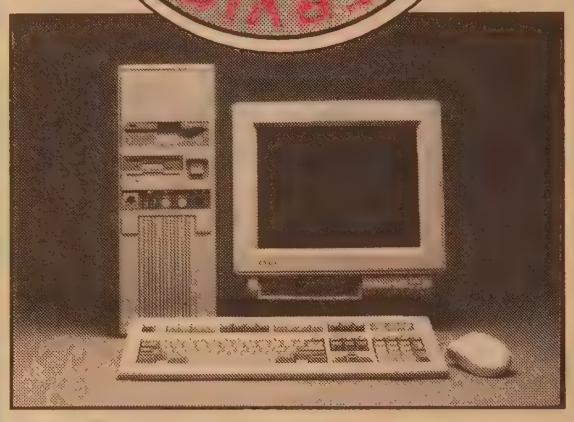
COMP BUSINESS

LOW PRICES AND GREAT SERVICE

Master EISA VLB Combo

- 256K Cache Ram
- 8 MB Ram(70ns)
- 1.2 MB & 1.44 MB Floppy Drive
- 245 MB 15MS IDE Hard Drive
- Fast Vesa LB IDE Controller (50x faster than standard controller)
- Super Vesa LB Accelerator Video (16.8M Color & Up to 1280x1024)
- 15" Vesa Color SVGA NI Monitor
- 2 Serial, 1 Parallel, & 1 Game Port
- Enhanced 101 Keyboard
- Desktop or 7 Bay Vertical Case
- Free Hi Res 1450 DPI Mouse

486/33 MHz	$1999
486/50 MHz DX2	$2159
486/50 MHz	$2219
486/66 MHz DX2	$2279
Vesa LB S3805	Add $50
Optional 10 Bay Case With 2 Fan for $115	



Super EISA Station

- 256K Cache Ram
- 4 MB Ram(70ns)
- 1.2 MB & 1.44 MB Floppy Drive
- 170 MB 15MS IDE Hard Drive
- Fast Eisa LB IDE Controller
- Super Eisa S3 805 Accelerator Video (50 Win Marks & Up to 1280x1024)
- 14" Vesa Color SVGA NI Monitor
- 2 Serial, 1 Parallel, & 1 Game Port
- Enhanced 101 Keyboard
- Desktop or 7 Bay Vertical Case
- Free Hi Res 1450 DPI Mouse

486/33 MHz	$1679
486/50 MHz DX2	$1869
486/50 MHz	$1919
486/66 MHz DX2	$1969
15" Digital Color SVGA Monitor	Add $120

VESA Local Bus Pro

- 64KK Cache Ram
- 4 MB Ram(70ns)
- 1.2 MB & 1.44 MB Floppy Drive
- 170 MB 15MS IDE Hard Drive
- Fast Vesa LB IDE Controller (50x faster than standard controller)
- Super Vesa LB Accelerator Video (16.8M Color & Up to 1280x1024)
- 14" Vesa Color SVGA NI Monitor
- 2 Serial, 1 Parallel, & 1 Game Port
- Enhanced 101 Keyboard
- Desktop or 5 Bay Vertical Case
- Free Hi Res 1450 DPI Mouse

486/33 MHz	$1529
486/50 MHz DX2	$1729
486/50 MHz	$1779
486/66 MHz DX2	$1829
Ultra 34F IDE Controller	Add $220

VESA Local Bus CAD

- 256K Cache Ram
- 8MB Ram (70ns)
- 1.2MB & 1.44MB Floppy Drive
- 340MB 15MS IDE Hard Drive
- Super Fast Vesa LB IDE Controller w/2MB Ram
- Super Vesa S3 LB Accelerator Video (Win Mark 50-Up to 1280 x 1024)
- 17" Vesa Color SVGA NI Monitor (W/Low Radiation Monitor)
- 2 Serial, 1 Parallel, 1 Game Port
- Enhanced 101 Keyboard
- Desktop or 7 Bay Vertical Case
- Free Hi Res 1450 DPI Mouse

486/33 MHz	$3049
486/50 MHz DX2	$3229
486/50 MHz	$3279
486/66 MHz DX2	$3329

Super EISA SCSI

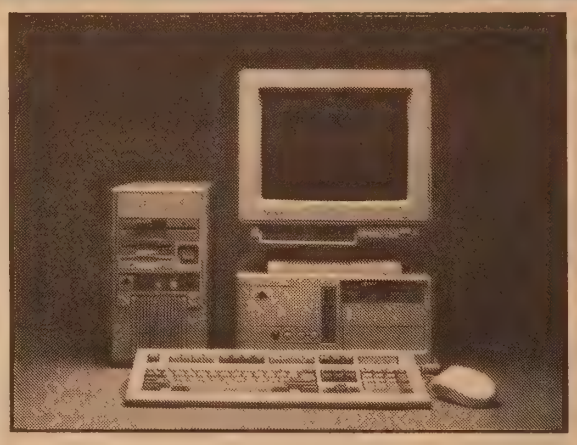
- 256K Cache Ram
- 8MB Ram(70ns)
- 1.2MB & 1.44MB Floppy Drive
- 200MB 50MS SCSI Hard Drive
- Super Fast SCSI Controller
- Super Vesa S3 805 Accelerator Video (Win Mark 50-Up to 1280 x 1024)
- 15" Vesa Color SVGA NI Monitor
- 2 Serial, 1 Parallel, 1 Game PORT
- Enhanced 101 Keyboard
- Desktop or 7 Bay Vertical Case
- Free Hi Res 1450 DPI Mouse

486/33 MHz	$2299
486/50 MHz DX2	$2469
486/50 MHz	$2519
486/66 MHz DX2	$2569

ISA Pro

- 64K Cache Ram
- 4 MB Ram(70ns)
- 1.2 MB & 1.44 MB Floppy Drive
- 120 MB 15MS IDE Hard Drive
- Super VGA 1 MB Video w/ 16 Mill Colors Accelerator Card
- 14" Vesa Color SVGA Monitor
- 2 Serial, 1 Parallel, & 1 Game Port
- Enhanced 101 Keyboard
- Desktop or 5 Bay Vertical Case
- Free Hi Res 1450 DPI Mouse

486/33 MHz	$1299
486/50 MHz DX2	$1429
486/50 MHz	$1479
486/66 MHz DX2	$1569
Midsize Vertical Case	Add $35
170MB 15MS IDE HD	Add $35
Focus 2001 Keyboard	Add $25
Focus 9000 Keyboard	Add $55



ISA Station

- 4 MB Ram(70ns)
- 1.2 MB & 1.44 MB Floppy Drive
- 85 MB 15MS IDE Hard Drive
- Super VGA 1 MB Video w/ 16 Mill Accelerator Card
- 14" Vesa Color SVGA Monitor
- 2 Serial, 1 Parallel, & 1 Game Port
- Enhanced 101 Keyboard
- Desktop or 5 Bay Vertical Case
- Free Hi Res 1450 DPI Mouse

486/40 MHz DLC	$1169
486/33 MHz SX	$1139
386/40 MHz	$1019
386/33 MHz	$999
386/33 MHz SX	$939
120 MB 15MS IDE HD	Add $50
96/24 Fax Modem	Add $80
2400 Modem	Add $45
Dos 5.0 & Windows 3.	Add $70

NOVELL CALL (818)960-1933
WE SUPPORT LANTASTIC & NOVELL NETWORK INSTALLATION

QUALITY COMPUTERS, INC.
13001 RAMONA BLVD. #C, IRWINDALE, CA 91706
(818) 960-1933
BUSINESS HOURS: MONDAY-FRIDAY 9:00-6:00 SATURDAY 10:00-4:00

ROYAL COMPUTER
1201 JOHN REED CT., CITY OF INDUSTRY, CA 91745
SALES (818) 333-7628 TECH SUPPORT (818) 333-2566
BUSINESS HOURS: MONDAY-FRIDAY 7:30-6:00 SATURDAY 7:30-5:00

COMPLETE SOLUTIONS

PERIPHERALS

MOTHERBOARDS

VLB 486 33MHz w/64K & CPU	$565
VLB 486 50MHz DX2 w/64K & CPU	655
VLB 486 50MHz DX w/64K & CPU	720
VLB 486 66MHz DX2 w/64K & CPU	780
EISA VLB 486 33MHz w/256K & CPU	595
EISA VLB 486 50MHz DX2 w/256K & CPU	725
EISA VLB 486 50MHz DX w/256K & CPU	790
EISA VLB 486 66MHz DX2 w/256K & CPU	860
ISA 286 20MHz w/CPU	72
ISA 386 33MHz SX w/CPU	125
ISA 386 33MHz w/64K & CPU	165
ISA 386 40MHz w/64K & CPU	185
ISA 486 33MHz DLC w/64K & CPU	320
ISA 486 40MHz DLC w/64K & CPU	360
ISA 486 25MHz SX w/CPU	250
ISA 486 33MHz SX w/CPU	290
ISA 486 33MHz w/64K & CPU	465
ISA 486 50MHz DX2 w/64K & CPU	595
ISA 486 50MHz DX w/64K & CPU	675
ISA 486 66MHz DX2 w/64K & CPU	740

VIDEO CARDS

MGP	$15
VGA 256K 16 Bit	35
VGA 512K 16 Bit	45
VGA 1MB 16 Bit	58
Acumos SVGA 1MB Accelerator w/16 Mill Colors	85
PVGA 1MB Win Accelerator	**155**
Diamond Hi Color	130
Diamond 24	155
Diamond 24x	170
Diamond Stealth 24	**210**
Diamond Stealth	185
Diamond Stealth Vesa Local Bus	**215**
Diamond Viper S3-805 2MB Ram	**450**
ATI Graphic Ultra Plus 1MB	320
ATI Graphic Ultra Pro 2MB	**430**
ATI Vesa Local Bus Pro 2MB	**430**
ATI Graphic Vantage	130
Genoa Win Accelerator 7900	130
Genoa Vesa Local Bus	**165**
Orchid Fahrenheit S3-801 16 Mill Colors	**165**
Orchid Fahrenheit S3-805 Vesa Local Bus	**215**

HARD DRIVES

40 MB IDE	$155
52 MB IDE	175
85 MB IDE	220
100 MB IDE	245
125 MB IDE	**250**
170 MB IDE	**285**
210 MB IDE	**350**
245 MB IDE	**380**
310 MB IDE	**570**
510 MB IDE	**915**
1.2 GB IDE	**1530**
125 MB SCSI	320
210 MB SCSI	450
310 MB SCSI	620
510 MB SCSI	975
1.2 GB SCSI	1660

ADD ON CARDS

AT I/O (2S, 1P, 1G)	$18
RS 232 Port	15
Parallel Port	12
Game Port	12
Clock	12
Multi I/O for XT	25
Super Multi I/O for XT	35

FLOPPY DRIVES

1.2 MB	$56
1.44 MB	52
2.88 MB	**90**
1.2/1.44 MB on One FDD	**150**

CONTROLLERS

XT/AT 2FD	$25
IDE w/IO (2S, 1P, 1G)	25
IDE 2FD/2HD	18
IDE 4FD/2FD	35
IDE 2FD/2HD w/2MB Cache	**185**
IDE 3rd/4th FDD	45
IDE 2.88 MB 2FD/2HD	**60**
IDE 2.88 MB 4FD/2HD	**75**
Eisa DTC 2290 IDE	130
Eisa DTC 3292 SCSI	**330**
Eisa DTC 3290 SCSI II Cache	405
Eisa IDE w/2MB Cache	295
Ultrastor 15C IDE Cache Controller	**210**
Ultrastor 14F SCSI Controller	**240**
Ultrastor 24F Eisa SCSI	**385**
Ultrastor 34F Vesa Local Bus	**310**
Orchid IDE Vesa Local Bus	**95**
Vesa Local Bus Controller w/ I/O	**55**
MFM for XT	48
MFM 2FD/2HD AT	50

MONITORS

14" 1024x768 .39 Dot	$235
14" 1024x768, .28 Dot	275
14" 1024x768, .28 Dot	300
CTX 1560 15" 1024x768, .28 Dot	450
CTX 1760S 15" 1024x768, .31 Dot	770
CTX 1760 17" 1024x768, .28 Dot	885
View Sonic 4 14"	315
View Sonic 5 14"	450
View Sonic 5E 14"	415
View Sonic 5+ 14"	495
View Sonic 6 14"	355
View Sonic 6E 14"	330
View Sonic 6FS 15"	585
View Sonic 7 17"	995
View Sonic 8 20"	1595
Mag 15F 15"	565
Mag 17F 17"	1060
IDEK 17 5127 17"	890
Toshiba 17" 1024x768 .31 Dot	870
NEC 3FGX 15"	645
NEC 4FG 15"	779
NEC 5FG 17"	1299
NEC 6FG 20"	2295
KFC 15" Digital Monitor 1280x1024	495
Mono 14" Monitor	105
Mono 14" VGA	115

KEYBOARDS

Lite On 101 Key	$35
BTC 101 Enhanced keyboard	35
Focus 2001	42
Focus 9000 Programmable	65
Keytronic 101 Key	45
Fujitsu 101K 4700	45
Chicony 101 Key	35
Mitsumi 101 Key	35
Northgate 101 Key	55
Northgate 102 Key	75
Northgate Omni Ultra 130 Key	95

ETHERNET CARDS

Ethernet 16 Bit Genesis	$89
Ethernet 16 Bit Novell	139
Intel Ether Express	139
16 Bit Western Digital	195
Ethernet 32 Bit Mylex	350
Ethernet 32 Bit Novell	689
Ethernet 32 Bit Vesa Local Bus	780
Artisoft AE-2 Starter Kit	489
Artisoft AE-2 Adapter	220

CD ROM

Sony 535i 340MS	$315
Sony 31A 490MS	265
CD Rom Software Bundle w/5 Titles	105
Sony 541 SCSI	475
NEC 84 Internal	595
NEC 74 External	635
Mutsumi CD ROM	230
Multimedia NEC 84 Upgrade Kit	950
Multimedia NEC 74 Upgrade Kit	1050
Media Vision Fusion CD Package	495
Royal Super CD Package	395
Multimedia Creative Labs Upgrade Kit Package	595
Multimedia Creative Labs Starter Kit Package	495

MOUSE

Generic Mouse 3 Button	$25
Logitech Serial	68
Logitech Bus	78
MicroSoft Serial	68
MicroSoft Bus	85
Generic Track Ball	35
Logitech Trackball Serial	95
Logitech Trackball Bus	115

TAPE BACKUPS

Colorado 120 MB	$195
Colorado 250 MB	260
Archive 250 MB	225

TAPE CARTRIDGES

120 MB	$24
250 MB	27

UPS

200 Watt	$220
250 Watt	250
600 Watt	480
900 Watt	680

SOUND CARDS

Pro Audio Spectrum 16 Bit	$235
Sound Blaster	95
Sound Blaster Pro Basic	175
Sound Blaster Pro	215
Sound Galaxy w/2 speakers	110
Speaker for Soundboard	35

DIGITIZERS

Summasketch 12x12"	$320
Kurta 12x12"	295
Calcomp 12x12"	295

MODEMS

2400 Internal	$45
96/24 Internal	75
9600 Internal	225
1.44/96 Internal	285
2400 External	65
96/24 External	125
9600 External	265
1.44/96 External	325
1.66/1.66 w/Voice Com	350
With Window Fax	Add $15

ALL SYSTEMS CARRY A ONE YEAR PARTS • 72 HOUR BURN-IN TIME BEFORE SHIPPING & LABOR WARRANTY • LEASING AND FINANCING AVAILABLE • 14 DAY MONEY BACK GUARANTEE • PRICES SUBJECT TO CHANGE WITHOUT NOTICE

TERMS AND CONDITIONS: PERSONAL AND COMPANY CHECKS ALLOW TWO WEEKS TO CLEAR. ALL UPS SHIPPING CHARGES ARE NOT REFUNDABLE.

NOVELL CALL 818/960-1933

WE SUPPORT LANTASTIC & NOVELL NETWORK INSTALLATION

QUALITY COMPUTERS, INC.

13001 RAMONA BLVD. #C, IRWINDALE, CA 91706

(818) 960-1933

BUSINESS HOURS: MONDAY-FRIDAY 9:00-6:00 SATURDAY 10:00-4:00

ROYAL COMPUTER

1201 JOHN REED CT., CITY OF INDUSTRY, CA 91745

SALES (818) 333-7628 TECH SUPPORT (818) 333-2566

BUSINESS HOURS: MONDAY-FRIDAY 7:30-6:00 SATURDAY 7:30-5:00

MAGICTEK

Highest Quality Systems & Service, At The Lowest Prices!

BBS: (714)939-9219

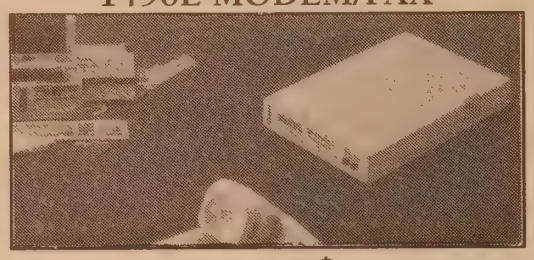
FINANCING AVAILABLE

FREE MOUSE PAD W/SYSTEM PURCHASE!

DEALERS/ CONSULTANTS ARE WELCOME! CALL FOR PRICING!!!

THIS MONTH'S SPECIAL

ZyXEL v.32 bis 16.8Kbps 1496E MODEM/FAX



ONLY $305
(w/Purchase of 486-33MHz System)

486-33MHz
256K CACHE

- 486-33MHz CPU (Intel)
- 256K External Cache
- Built-In Math Co-Processor & 8K RAM Cache
- 4 Meg Installed Expandable to 32 Meg On Board
- 170MB IDE 15ms
- IDE Controller
- 1.2 & 1.44 Floppy Drive
- AT I/O, 2 Serial, 1 Parallel, 1 Game Ports
- Super VGA Card w/1024K (32K Colors) (ET 4000)
- Super VGA Monitor Non-Interlace (.28dpi) (Viewsonic 6)
- 101 Enhanced Keyboard
- Mid Tower Case & 230W Power Supply
- DOS 5.0 w Manuals

$1579

DX/DX2-50MHz Available ..... CALL
DX2-66MHz Available ..... CALL
VESA Local Bus Available ..... CALL

386-40 MHz
128K CACHE

- 386-40MHz CPU
- 128K External Cache
- 4 Meg Installed Expandable to 32 MB
- 80387 Math Co-Processor Socket
- 120MB Hard Drive
- IDE Controller
- 1.2 & 1.44 Floppy Drive
- AT I/O, 2 Serial, 1 Parallel, 1 Game Ports
- Super VGA Card w/1024K
- Super VGA Monitor (1024x768, .28mm)
- 101 Enhanced Keyboard
- AT Digital Tower Case & 230W Power Supply
- DOS 5.0 w/Manuals

$1159

486SX 25 ..... CALL
Cyrix 486 ..... CALL

1 Year Parts & Labor Warranty For Systems

386-25MHz

- 386-25MHz CPU
- 80387 Math Co-Processor Socket
- 120MB Hard Disk 18ms
- VGA 256K
- AT Digital Mini Case & 230W Power Supply

$895

386SX-33MHz

- 386SX-33MHz CPU
- 80387 Math Co-Processor Socket
- 80MB Hard Disk 28ms
- VGA Card 16 Bit
- Mini Tower Case & 200W Power Supply

$799

SYSTEMS ABOVE INCLUDE:

- 1024K Installed
- 16 Bit 1:1 H&F Controller (IDE)
- 1.2 Floppy Drive
- AT I/O, 2 Serial, 1 Parallel, 1 Game Ports
- VGA Monitor (Viewsonic 1)
- 101 Enhanced Keyboard
- DOS 5.0 w/Manuals

COLOR NOTEBOOKS NOW AVAILABLE!

NOTEBOOK

- 486SX 25MHz
- 4MB RAM
- 1.44MB Drive
- 120MB Hard Disk
- VGA Screen
- 2 Serial, 1 Parallel
- Internal Fax/Modem
- Carrying Bag

$1759

486DX-33MHz ..... CALL
386SX-25MHz ..... CALL
386SX Color ..... CALL

PRINTERS:

Panasonic 1180i	$149
Panasonic 1124i	275
Panasonic 4410	625
Epson All Models	CALL
HP Laser Printer All Models	CALL

MISCELLANEOUS:

AT I/O w/16550 chip	$29
Adaptec SCSI 1542B	220
IDE w/Cache (512K Upgrade to 16.5MB)	125
TEAC Floppy Drive (1.2M)	55
TEAC Floppy Drive (1.44M)	46
Windows w/Dexxa Mouse	65

CASES:

Mini Tower w/Digital	$59
Mid Tower w/Digital	75
Big Tower w/Digital 230W	125
Big Tower w/Digital 250UL	145

MOUSE:

Logitech	$62
Microsoft	58
Portable Trackball	59
Serial Mouse	15

MEMORY CHIPS/MATH COPROCESSORS CALL!

COLORADO TAPE DRIVES:

120MB	$175
250MB	225
DC 2120 Tape	20

KEYBOARDS:

Maxi-Switch	$34
Fujitsu 4700-601KB	38
Focus 2001	38
BTC 53309SX	22
Keytronic BE/SE (Big/Small Enter)	40
NMB	38
Focus 9000	65

CD-ROM SONY

Multi-Media Kit Fusion CD 16	$495
541 (SCSI)	375
Ext. CD-ROM	425
U31A-02	255
CD Software	105
Panasonic	255

SONY CD-ROM DRIVES!

External ..... $505 Internal $405

SOUND CARDS

Sound Blaster Pro Basic	$149
Pro Audio16	195
ATI Sound Card w/Speakers	119

VIDEO CARDS

Trident 1 MG	$59
Orchid Fahrenheit 1280 VA	205
VESA Local Bus Orchid Fahrenheit	205
Diamond Stealth 24X	170
Diamond Stealth VRAM	225
Video Blaster	379
All VESA Local Bus Video Cards Available	CALL

MONITORS

ViewSonic 1 14", .39dp, 1024x768	$225
ViewSonic 4E 14", .28dp, 1024x768	285
ViewSonic 5+ 14", .25dp, 1024x768, 72Hz Refresh	509
ViewSonic 5E 14", .28dp, 1024x768, 72Hz Refresh	399
ViewSonic 6 14", .28dp, 1024x768, 72Hz Refresh	329
ViewSonic 6FS 15", .28dp, 1024x768, 72Hz Refresh	550
ViewSonic 7 17", .28dp, 1280x1024, 72Hz Refresh, N/I	985
ViewSonic 8 20", .31dp, 1280x1024, 72Hz Refresh, N/I	1575
MAG 15"	550
MAG 17"	106

MasterCard VISA

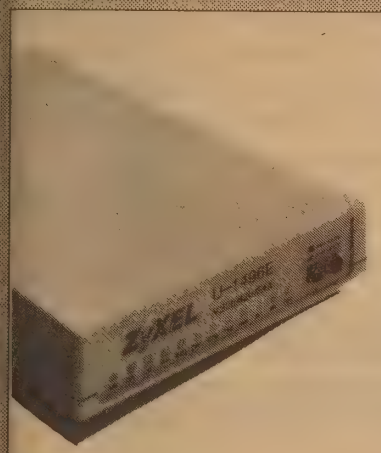
BUSINESS HOURS: MONDAY-FRIDAY: 9:30 A.M. - 7:00 P.M. SATURDAY: 10:00 A.M. - 3:30 P.M.

COMPUTERS

TEL: (714)939-9220
FAX: (714)939-9221

PC MAGAZINE EDITOR'S CHOICE

EDITOR'S CHOICE:
ZyXEL
U-1496E
GERMAN EDITION
4/92



$325

ZyXEL U-1496 Plus

- Upgradable to 19.2Kbps
- Cellular Fax/Modem Adapter For Notebooks/Laptops

ZyXEL U-1496E

- ZyXEL 16.8 Kbps Ultra High Speed
- LED Indicators with Voice/Data and Answer/Originate Switches

ZyXEL HIGH SPEED MODEM FAX

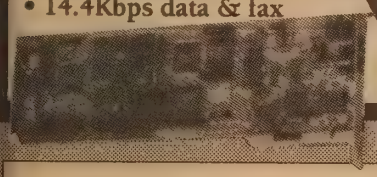
NOW WITH VOICE CAPABILITY & 16.8 Kbps ULTRA HIGH SPEED

ZyXEL V.32bis - 4.4Kbps Data + 14.4Kbps FAX • Call-Back Security with Password Protection - Auto Fast Retrain Remote Configuration - Caller ID & Distinctive Ring

- High speed compatibility with V.32 bis and V.32 and low speed compatibility with V.22/BELL 212A or 1.2K bps
- Call-back security with password protection promotes data integrity and prevents unauthorized access
- Remote configuration capability enables you to reconfigurate the modems through dial-up lines
- Combines fast retrain with automatic fall-forward and fall-back, working most efficiently on a poor line or an unstable phone line conditions
- Call ID decoding and distinctive ring detection
- DTE speeds up to 57.6Kbps with CCITT V.42 bis and MNP® 5 data compression and industry standard V.42 and MNP® 3/4 error correction
- EIA Class 2 G3 FAX, V.17-14.4Kbps, send & receive with PC® FAX software
- Supports V.25 bis auto-dial and enhanced AT Command set ensuring compatibility with popular communication and fax software
- ZyXEL modems run in the Windows,® DOS, Macintosh,® OS/2® and UNIX® environments
- Firmware upgradability. New features and functions can be added simply by updating the EPROM Firmware.

U-1496B
P.C. Plug In Card

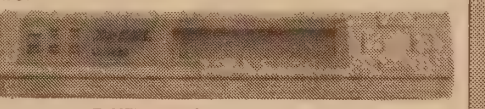
- Highest performance for the lowest price!
- 14.4Kbps data & fax



$295

TECHNICAL SUPPORT
(714)939-9220
• ZyXEL modems are available with FREE ZFAX software and
• FAX software options for IBM™ PC's with Windows™ add $30 and Macintosh add $45
• ZyXEL modems offer the best value for less money than any other modem/fax in its class. So don't hesitate to call TODAY.

U-1496



$549

- ZyXEL 16.8Kbps
- LCD Display - Easy to Read
- 2/4 Wire Leased Line
- Line Condition Monitoring
- V.33, V.29 and V.27ter

All brand names and trademarks are the property of their respective owners.

LOCAL AREA NETWORKING INTERFACE CARDS & ACCESSORIES

ETHERNET ADAPTERS

8 Bit Ethernet Card w/8K Buffer	$85
16 Bit Ethernet Card w/16K Buffer	95
16 Bit Ethernet 10 BASE-T Card	119
Ethernet Card for PS/2 50, 60 & 80	175
Pocket Ethernet	205
Pocket Arcnet	195
Lantastic 4.1	CALL
NOVELL Lite 1:1	CALL

ARCNET ADAPTERS

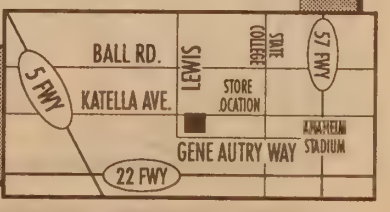
8 Bit Arcnet/Star/Coaxial	$45
8 Bit Arcnet/Bus/Coaxial	49
8 Bit Arcnet/Bus/Twisted Pair	65
16 Bit Arcnet/Star/Coaxial	75
16 Bit Arcnet/Bus/Coaxial	85
Window Work Group	CALL

ARCNET/ETHERNET HUBS

Arcnet 8 Port Active Hub	$145
Arcnet 4 Port Active Hub Card	65
Arcnet 4 Port Passive Hub	15
Arcnet 8 Port Twisted Pair Active Hub	145
8 Port ETHERNET 10 BASE-T Concentrator	350
12 Port ETHERNET 10 BASE-T Concentrator	505

(Prices subject to Change Without Notice)

1218 E. KATELLA, ANAHEIM, CA 92805



VALLEY COMPUTER

WE SPECIALIZE IN ...
Local Area Network • Image Database
Retail POS System • Medical /Dental
Record Keeping

LaserFiche Image Database
This is our flagship product, used by companies such as: 20th Century Fox, Dept. of Water & Power, Merisel, Westinghouse, U.S. Navy and the I.R.S.

486DX-33 MHz
- 256K Cache
- 4 MB RAM
- 1.2 & 1.44 FDD
- 200 MB HDD
- 14" Super VGA Color Monitor

486-50 add $200 **$1750**

NOVELL

SPECIAL...
Novell Netware 3.11 or 2.2 Pre-installed Turn-key System. We offer on-site service and training.
CALL

FREE PRINTER
with purchase of 386DX-33 or 486DX-33 System

386DX-33 MHz
- 64K Cache
- 4 MB RAM
- 1.2 & 1.44 FDD
- 120 MB HDD
- 14" Super VGA Color Monitor

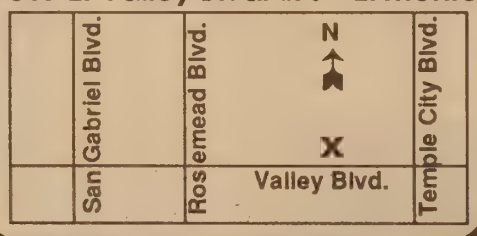
386-40 add $25 **$1350**

386SX-33 MHz
- 2 MB RAM
- 1.2 & 1.44 FDD
- 80 MB HDD
- 14" VGA Color Monitor

$885

All Systems come with 2S/1P/1G Ports, Mouse and Mini tower, AT 101 keyboard.

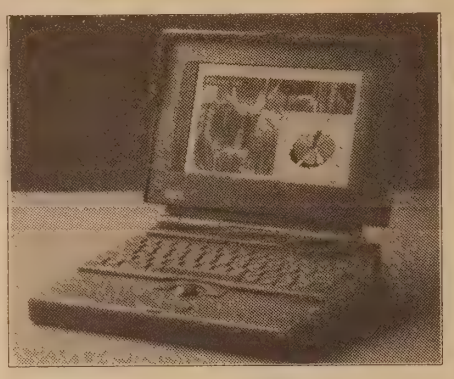
• Valley Computers •
Call: (818) 579-5639
9619 E. Valley Blvd. #A • El Monte



PRODUCT SPOTLIGHT

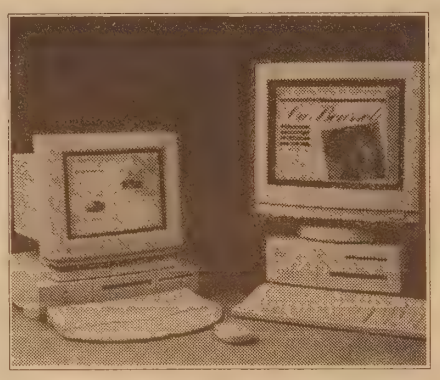
Continued from page 90

COLOR POWERBOOK



The PowerBook 165c is equipped with a new passive matrix color display. The 640 x 400 backlit display supports a standard 256 colors from a palette of 4096 colors. In addition to the new color display, the 165c is powered by a 33MHz 68080 microprocessor and has a 68882 math coprocessor. The on-board video supports Apple color and monochrome monitors, some VGA and SVGA displays, and large projection monitors. The 165c also supports video mirroring and dual monitor mode. (PowerBook 165c 4/80, $3399) Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. (408)996-1010.

MACINTOSH CENTRIS 610 AND 650



The Macintosh Centris is a new line of midrange personal computers that offer the high performance of a Motorola 68040 microprocessor at a significantly lower price. The Centris 610, which features a low-profile industrial design, is powered by a 20MHz 68LC040 microprocessor that does not include a floating-point unit. It offers up to two times the performance of the Mac IIvx or IIci. The Centris 650, based on the same design as the IIvx and IIvi, is powered by a 25MHz 040 CPU. Both computers have built-in video support for all Apple displays and are available with an optional internal CD300i CD-ROM drive and optional on-board Ethernet. (Centris 610 4/80, $1895; Centris 650 4/80, $2699) Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. (408)996-1010.

APPLE LASERWRITER SELECT SERIES

The LaserWriter Select 300 and Select 310 are powered by a Fuji Xerox 5-page-per-minute laser engine and share the same compact design. The printers come standard with a letter cassette tray that holds 250 sheets of paper. The Select 300 is an expandable laser printer ideal for individual users. Its 300dpi

resolution, combined with FinePrint edge-smoothing technology and thirty-nine scalable TrueType fonts ensures high-quality results. The printer can be upgraded to support Adobe PostScript. The LaserWriter 310 is an affordable PostScript printer powered by AMD's AM29205 RISC processor. It is designed for both Macintosh and Windows environments. (Select 300, $819; Select 310, $1079) Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. (408)996-1010.

MACINTOSH ACCESSORIES

MAC DISPLAYLINK

Mac DisplayLink is an external video encoder that produces either a 640 x 480 or 512 x 384 pixel image. Supporting both standard NTSC and high-resolution S-Video signals, Mac

DisplayLink provides an alternative to expensive displays or projectors. You can now display Macintosh video output on cost-effective presentation video equipment. Use the Apple 8/24, 8/24GC, or compatible card to display an RGB signal onto conventional video monitors, video projectors, or record the output on videotape. All the cables necessary to connect to the computer and desired video device are included. (Model CF-530, NTSC, with Action!, $489, and Model MF-530, PAL, $649) Display Tech, Inc., PO Box 6722, Concord, CA 94524. (510)676-9362.

NITECAPS

NiteCaps are new Macintosh computer covers with panache and personality. They offer a fun way to put your computer to sleep

Continued on page 105

SPECIAL *Lowest Price !.*

486 VESA LOCAL BUS

***32Bits IDE AND SVGA**

$1620.00
486DX33

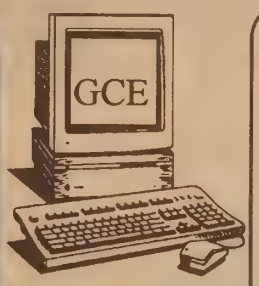
-Medium Tower case, 220Watt power supply
-Local Bus VESA MBrd, 256K Cache
-Built-in Math-Coprocessor.
-**1.2 and 1.44** floppy disk drives TEAC.
-**170 MB** hard disk drive IDE.
-32Bits VESA IDE, 2sers/1par/1game Ports.
-Enhanced 101 Keytronics keyboard.
-**4 MB** memory, expandable to 32MB.
-32Bit VESA SVGA **1MB** controller card.
-VESA SVGA 102414" .28 Non-Int. Monitor.

$1895.00
486DX2-66

$1190.00 **FREE** WINDOWS 3.1 DOS 5.0 MOUSE
WITH PURCHASE OF ANY COMPLETE SYSTEM

386DX40
128K CACHE

-Mini tower case, 200Watt power supply
-Mother Board **,64K cache,** Clock,Cal.
-Math-Coprocessor Socket.
-**1.2 and 1.44** floppy disk drives TEAC.
-**170 MB** hard disk drive IDE.
-F/Hdd controller, 2sers/1par/1game ports.
-101 enhanced keyboard.
-**4 MB** memory, expandable to 32MB.
-SVGA 1024X768 **1MB** controller card.
-SVGA 1024x768 14" .28 Non-Int. Monitor.



$1475.00

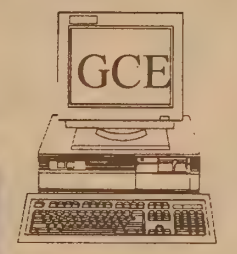
486DX33 MHZ
256K CACHE

-Mini tower case, 200Watt power supply
-Mother Board **,256K cache, INTEL CPU**
-Built-In Math-Coprocessor.
-**1.2 and 1.44** floppy disk drives TEAC.
-**170 MB** hard disk drive IDE.
-F/Hdd controller, 2sers/1par/1game ports.
-101 Enhanced keyboard.
-**4 MB** memory, expandable to 32MB.
-SVGA 1024X768 **1MB** controller card.
-SVGA 1024x768 14" .28 Non-Int. Monitor.

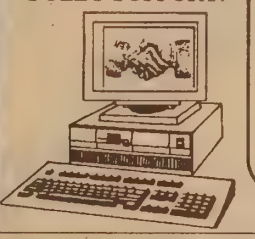
$920.00

386SX 33MHZ

-Mini tower case, 200W power supply
-Mother Board**,** Clock,Cal, Bat.
-Math-Coprocessor Socket .
-**1.2 and 1.44** floppy disk drives TEAC.
-**85 MB** hard disk drive IDE.
-F/Hdd controller, 2sers/1par/1game ports.
-101 enhanced keyboard.
-**2 MB** memory, expandable to 32MB.
-VGA 640X480 Controller card.
-VGA 640X480 14" .39 Monitor.



*ABSOLUTELY
NO HIDDEN COST.
NO ADD ON COST
SYSTEMS ARE
*FULLY LOADED
*FULLY SERVICE &
*FULLY SUPPORT!



$1675.00

486DX 50MHZ
256K CACHE

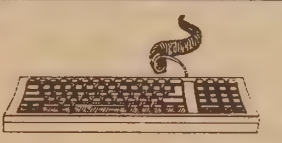
-Medium tower case, 220W power supply
-MBoard **,256K cache, INTEL CPU**
-Built-In Math-Coprocessor.
-**1.2 and 1.44** floppy disk drives TEAC.
-**170 MB** hard disk drive IDE.
-F/Hdd controller, 2sers/1par/1game ports.
-101 Enhanced keyboard.
-**4 MB** memory, expandable to 32MB.
-SVGA 1024X768 **1MB** controller card.
-SVGA 1024x768 14" .28 Non-Int. Monitor.

9600B FAX S/R
2400B MODEM
INT: $59.00
EXT: $95.00

2400B MODEM
INTERNAL
W/BITCOM
$35.00

GENIUS 3BUTTON
MOUSE $15.00

COLORADO
TAPE DRIVE
120MB: $190
250MB: $240



KEYTRONICS $40.00
FUJITSU $39.00
GENERIC 101 $20.00

SCANNERS w/OCR & EYEPHOTO:
GENIUS 256 GRAY SCALE $185.00

1-800-400-HAL1 ** (818)545-8665
HAL COMPUTER SYSTEM IN GLENDALE ** FAX 818 547 1590
121 WEST WILSON, GLENDALE CA 91203 (BETWEEN BRAND & ORANGE)
VISA & M/C Accepted

GENERAL COMPUTER

GENERAL COMPUTER
TEL:714 999-2894
1501 N. RAYMOND STE. J ANAHEIM CA 92801
FAX:999-2793

Prices and availability subject to change without notice. Not responsible for typographical errors.

ESSENCE

17815 Newhope Street, Suite G,

Essence Group's Protection Plan

- **1 Full Year Parts Warranty**
- **2 Year Labor Warranty**
- **"Free" Lifetime Technical Support**

Terms & Conditions:

All parts and systems carry a one year limited warranty except for monitors and printers which are warranted by manufacturers. Any consumable products are not returnable nor refundable. Any opened software is non-refundable. All sales on monitors & printers are final. Repairs need to be sent to the manufacturer. No refund. All returns are subject to our approval and must have prior authorization return items must be in its original condition with invoice. Send shipping prepaid. All refunds or credits are less shipping and bank charges. All refund items must be returned within 14 days of invoice. There will be a 20% restocking fee after the 14 day period and within 30 days of invoice. Thereafter only exchanges and repair for the rest the warranty period. Price, specification and availability subject to change without any notice.

VISA MasterCard

No surcharge on credit card purchase.

Easy Financing Plan Available

3% Cash Discount

Hours:
9 am - 6 pm Mon. - Fri.
10 am - 5 pm Sat P.S.T.

Orchid Local Bus

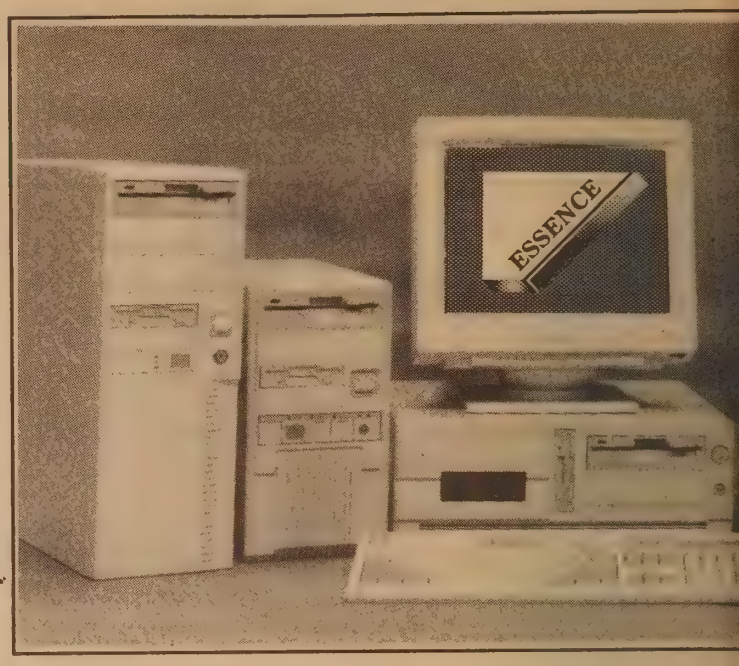
VESA Standard

486DX2-66 ..... $1550.00
486DX-50 ..... $1440.00
486DX-33 ..... $1255.00

Made in USA

- ✧ Orchid 486DX VESA Local Bus M/B
- ✧ 256K High Speed Cache
- ✧ 4MB Memory on board expandable up to 32MB
- ✧ TEAC 1.2M & 1.44M FDD
- ✧ 32-Bit Orchid Fahrenheit VLB w/1MB
- ✧ 32-Bit VESA IDE Controller
- ✧ 2 Serial / 1 Parallel / 1 Game
- ✧ CS-35 Mid-Veritcal Case
- ✧ 230 Watts UL Power Supply
- ✧ Enhanced 101 Keys Keyboard

VA Options + $40



VESA LOCAL BUS

The Superboard 486 VLB delivers unsurpassed power for even the most demanding applications. The 486 VLB (VESA Local Bus) is an ISA motherboard equipped with two (2) VLB slots for a high performance video card and/or fast IDE controller. It provides the answer to the speed bottleneck caused by traditional AT-compatible motherboard designs. The local bus design provides direct 32-bit data transfer between the video card/IDE controller and the CPU at CPU speed. Pair the Superboard 486 VLB with an Orchid Fahrenheit VA/VLB graphics card, and you'll experience the fastest graphics and motherboard combination possible.

FAHRENHEIT VA.....$205

Made in USA

with system $189

VOICE ANNOTATION

The Fahrenheit VA is more than just a Windows Accelerator - it features the fastest graphics possible, with a twist! With Orchid's own Voice Notes software, the Fahrenheit enable you to add custom voice annotation to all Windows applications utilizing Object Linking & Embedding (OLE). A single keystroke opens the Voice Notes window, allowing you to easily record, play, pause and automatically embed you recording within the document. The Fahrenheit VA also come with Orchid HyperDriver - the fastest driver available for Windows. This product supports up to 16.8 million colors at 640 x 480, 256 colors at 800 x 600 and 1024 x 768.

Non-VA Version also available

Order Hot Line:
1-714-546-3110

Technical Support:
1-714-546-7902

Fax Order Line:
1-714-546-3803

Please Call For Dealer Prices

Made in USA

VEGA VESA Local Bus

VESA 486DX2-66VLB $1425
VESA 486DX-50VLB $1330
VESA 486DX-33VLB $1130

- * VEGA 486DX VESA Local Bus M/B
- * 256K High Speed Cache
- * 4MB Memory on board expandable up to 64MB
- * TEAC 1.2M & 1.44M FDD
- * 32-Bit VLB Graphics Accelerator w/1MB
- * 32-Bit VESA Local Bus IDE Controller
- * 2 Serial / 1 Parallel / 1 Game
- * CS-35 Mid-Vertical Case
- * 230 Watts UL Power Supply
- * Enhanced 101 Keys Keyboard

Made in USA

VEGA EISA Bus

EISA 486DX2-66VE $1655
EISA 486DX-50VE $1555
EISA 486DX-33VE $1360

- * VEGA 486DX EISA M/B
- * 256K High Speed Cache
- * 4MB Memory on board expandable up to 128MB
- * TEAC 1.2M & 1.44M FDD
- * 32-Bit DTC2290 EISA IDE Controller
- * 32-Bit Orchid IIs-E 1MB EISA VGA Card
- * 2 Serial / 1 Parallel / 1 Game
- * CS-35 Mini-Vertical Case
- * 230 Watts UL Power Supply
- * Enhanced 101 Keys Keyboard

Made in USA

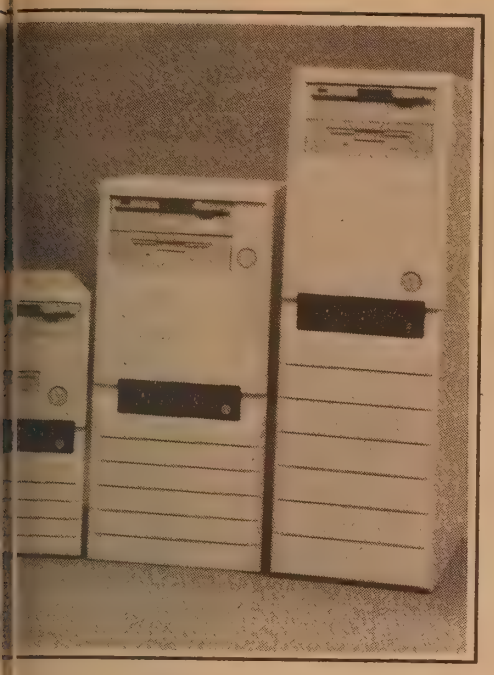
VEGA ISA Bus

486DX2-66V $1210
486DX-50V $1110
486DX2-50V $1035
486DX-33V $905
486SX-25V $750
386DX-40V $650
386DX-33V $645

- * VEGA 3486DX ISA M/B
- * 256K High Speed Cache
- * 4MB Memory on board expandable up to 32MB
- * TEAC 1.2M & 1.44M FDD
- * 2 Serial / 1 Parallel / 1 Game
- * CS-35 Mid-Vertical Case
- * 230 Watts UL Power Supply
- * Enhanced 101 Keys Keyboard

GROUP

Fountain Valley, CA92708



Essence486 VESAEISALocalBus

VESA 486DX2-66HLB $1370
VESA 486DX-33HLB $1070

* HINT 486DX EISA Local Bus M/B
* 256K High Speed Cache
* 3 EISA Bus, 2 VESA Local Bus
* 4MB Memory on board expandable up to 32MB
* TEAC 1.2M & 1.44M FDD
* 32-Bit VESA Local Bus IDE Controller
* 32-Bit 1MB VESA Local Bus VGA Card
* 2 Serial/1 Parallel/1 Game
* CS-35 Mid-Vertical Case
* 230 Watts UL Power Supply
* Enhanced 101 Keys Keyboard

Essence486 VESALocalBus

VESA 486DX2-66LB $1325
VESA 486DX-33LB $1020

* VESA Local Bus 486DX M/B
* 256K High Speed Cache
* 4MB Memory on board expandable up to 32MB
* TEAC 1.2M & 1.44M FDD
* 32-Bit VESA Local Bus IDE Controller
* 32-Bit 1MB VESA Local Bus VGA Card
* 2 Serial/1 Parallel/1 Game
* CS-35 Mid-Vertical Case
* 230 Watts UL Power Supply
* Enhanced 101 Keys Keyboard

Essence486Series

486DX2-66 ..... $1110
486DX-50 ..... $995
486DX2-50 ..... $980
486DX-33 ..... $805
486SX-25 ..... $655

* 486DX/SX M/B
* 256K High Speed Cache
* 4MB Memory on board
* TEAC 1.2M & 1.44M FDD
* IDE FDD & HDD Controller
* 2 Serial/1 Parallel/1 Game
* CS-932 Mini-Vertical Case
* 230 Watts Power Supply
* Enhanced 101 Keys Keyboard

Essence386Series

386DX-40 ..... $510
386DX-33 ..... $510
386SX-40 ..... $380
386SX-33 ..... $365

* 386DX-40/33 SX-40/35 M/B
* 128K High Speed Cache (0K for SX-40 & SX-33)
* 4MB Memory on board (2MB for 386SX)
* TEAC 1.2M & 1.44M FDD
* IDE FDD & HDD Controller
* 2 Serial/1 Parallel/1 Game
* CS-932 Mini-Vertical Case
* 230 Watts Power Supply
* Enhanced 101 Keys Keyboard

Essence486DLC

486DLC-40 ..... $670
486DLC-33 ..... $635
486DLC-25 ..... $535

* 486DLC M/B
* Cyrix 486DLC Microprocessor
* Math Co. included (33 & 40MHz)
* 64K High Speed Cache
* 4MB Memory on board
* TEAC 1.2M & 1.44M FDD
* IDE FDD & HDD Controller
* 2 Serial/1 Parallel/1 Game
* CS-932 Mini-Vertical Case
* 230 Watts Power Supply
* Enhanced 101 Keys Keyboard

Upgrade Options

For ISA Systems:

14" Mono VGA (Paper-White) Monitor w/AVGA Card (256K) $153
14" Infiniti IN8339SV Super VGA Monitor (.39dp) w/TVGA-8900CL 1MB VGA Card $280
14" Acer View 11 VGA Color Monitor (.39dp) w/16-bit VGA Card (256K) $265
14" Acer View 33D Super VGA Color Monitor (.28dp) w/TVGA-8900CL 1MB VGA Card $345
14" Acer View 34T Non-Interlaced Color Monitor (.28dp) w/TVGA-8900CL 1MB VGA Card $385
15" Acer View 56L Digital Auto-Tracking Flat-Screen Monitor w/Orchid Fahrenheit 1MB Graphics Accelerator $645
14" CTX-5468A Super VGA Monitor (.28dp) w/TVGA-8900CL 1MB VGA Card $340
14" CTX-5468NI Non-Interlaced Color Monitor (.28dp) w/TVGA-8900CL 1MB VGA Card $365
14" CTX-1461 Digital Auto-Tracking Monitor (.28dp) w/TVGA-8900CL 1MB VGA Card $385
15" CTX-1560 Digital Auto-Tracking Monitor (.28dp) w/Orchid Fahrenheit 1MB Graphics Accelerator $605
17" CTX-1760 Digital Auto-Tracking Monitor (.28dp) w/Orchid Fahrenheit 1MB Graphics Accelerator $965
14" ViewSonic 6E Non-Interlaced Color Monitor (.28dp) w/TVGA-8900CL 1MB VGA Card $385
14" ViewSonic 5E Non-Interlaced Color Monitor (.28dp) w/TVGA-8900CL 1MB VGA Card $455
15" ViewSonic 6FS Digital Auto-Tracking Flat-Screen Monitor w/Orchid Fahrenheit 1MB Graphics Accelerator $695
17" ViewSonic 7 Digital Auto-Tracking Monitor (.28dp) w/Orchid Fahrenheit 1MB Graphics Accelerator $1135

Hard Disk Subsystem & Other Options (w/Systems):

40MB IDE HDD $150
80MB IDE HDD $200
120MB IDE HDD $250
170MB IDE HDD $275
200MB IDE HDD $345
240MB IDE HDD $375
340MB IDE HDD $535
520MB IDE HDD $860
Promise IDE Caching Controller w/2MB $185
MicroSoft DOS 5.0 ..... $40
MicroSoft Windows 3.1 w/Mouse $60
Internal 2400 Buad Data Modem $52
Internal 9600/2400 Baud Fax Modem $58
Internal 14400/14400 Baud Fax Modem $200
Sony CDU-31A Internal CD-ROM $255
Sound Blaster $90
Sound Blaster Pro (Basic version) $145
Media-Vision Pro Audio Spectrum 16 Sound Card $180
Orchid Sound Producer Prow/Speaker & Mic ... $149
Power Center (UL) $16
Creative Lab Multimedia Starter Kit $435
-Panaonic Internal CD-RoM (390ms)
-Sound Blaster Pro Basic
-Six CD Titles: Microsoft Bookshelf, SB Voice Editor FM Intelligent Organ, SB Talker, CD-Music Player, and MMPlay

For EISA & Local Bus Systems:

ViewSonic 6E 14" Non-Interlaced Monitor $325
ViewSonic 5E 14" Non-Interlaced Monitor $395
ViewSonic 6FS 15" Digital Non-Interlaced Monitor $545
ViewSonic 7 17" Digital Multi-Frequency Monitor . $985
ViewSonic 8 20" Digital Multi-Frequency Monitor $1570
CTX-5468NI 14" Non-Interlaced Monitor $305
CTX-1461 14" Non-Interlaced Monitor $325
CTX-1560 15" Digital Non-Interlaced Monitor $455
CTX-1760 17" Digital Non-Interlaced Monitor $805
MAG 1564 15" Digital Non-Interlaced Monitor $490
MAG 15H 15" Digital Non-Interlaced Monitor $565
MAG 17H 17" Digital Non-Interlaced Monitor $1035

Memory Upgrade:

4MB (386SX) $75
8MB (486DX/SX, 386DX) $150
16MB (486DX/SX, 386DX) $480

Tape Backup:

Hi-Lite (Archive) 250MB Tape Backup $198
Colorado DJ-10 120MB Tape Backup $169
Colorado DJ-20 250MB Tape Backup $219
Colorado JT-10 120MB Parallel Tape Backup ... $355
Colorado JT-20 250MB Parallel Tape Backup ... $420

For more parts see listings on next page

Star Moon Star WILD Multi-Media Upgrade Kit

Upgrade Kit included:

SONY CDU-31A CD-ROM

- The lastest CD-ROM from SONY, 680MB capacity, 64KB buffer size, 150KB data transfer rate, 490ms access speed, built-in caddy for ease of use

Sun Moon Star Stereo Sound Board

- MPC, Ad Lib, and Sound Blaster Pro Basic compatible
- Stereo Digital/Analog mixer for stereo audio sources: DAC, FM, microphone, line-in and CD
- Sampling with 8-bit stereo DACs and ADCs selectable sampling rates: 4 - 44.1 KHz
- 20-voice, 4-operator OLP3 FM synthesier
- Built-in MIDI interface for music and sound creation
- Standard PC joystick port
- Microphone Automatic Gain Control (AGC) amplifier
- Output power amplifier with volume control
- Built-in interface for SONY CDU-31A

Bundled Multimedia CD titles including:

- Multimedia Encyclopedia '92
- World Atlas
- U.S. Altas
- Chessmaster 3000
- Mavis Beacon Teaches Typing V.20

$435

Mitsumi CD-ROM Model: CRMC

- MPC compliant
- 630MB Capacity
- 350ms access time
- 175KB data transfer rate
- comes with 16-bit interface cards & cable

$219

Orchid Sound Producer Pro

The Sound Producer Pro is Orchid's entry into the world of sound. The Sound Producer Pro delivers an umparalleled features set while maintaining 100% Sound Blaster Pro compatibility. With 20-voice FM synthesizer and digital sounds, it delivers support for 4 sound standards including Sound Blaster Pro, Ad Lib, Disney sound Source and Covox Speech Thing, and the ability to add Voice Note to any Windows docements created with Windows applications with Object Linking and Embedding (OLE) support. The Sound Producer Pro is guaranted to deliver the bvest quality sound to your favorite games or to business presentations with sampling rates up to 44.1 KHz. The package comes complete with joystick port, MIDI in/out support, stereo microphone input, and speaker at no additional charge.

$149

ESSENCE GROUP

For systems see list on front pages

COMPLETE NETWORK SOLUTION, PLUG & PLAY.....

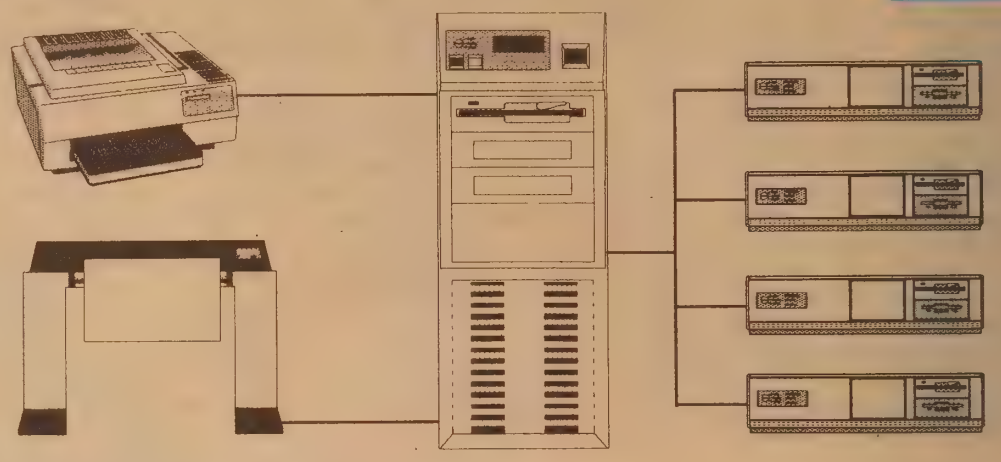
IN ESSENCE, WE ONLY USE QUALITY NETWORK PRODUCTS INCLUDED:

Network Cards: **Eagle, Intel, Accton, 3COM, SMC, Thomas-Conrad**
Controllers: **Always, Adaptec, DTC, Future Domain, UltraStor**
Hard Disk: **Conner, Fujitsu, Maxtor, Micropolis, Seagate, Storage Dimension**
Uninterruptiable Power Supply: **American Power Conversion, Tripp-Lite**
Tape Backup: **Colorado Memory System, Maynard/Archive, Mountain, Summit Express, Tecmar, Wangtek**

Novell Certified NetWare Engineer™

FILESERVER:
ESSENCE 486DX-33MHz System
- VEGA 486DX-33MHz M/B
- 256K High Speed Cache
- 8MB Memory expandable to 32MB
- TEAC 1.2M & 1.44M FDD
- Always IN-2000 SCSI Controller
- Maxtor 535MB SCSI HDD
- 14" MonoVGA Monitor w/VGA Card
- 2 Serial / 1 Parallel Ports
- Full size Tower Case w/300Watt PS
- Dual fan for efficient cooling
- Enhanced 101 Keys Keyboard
- Intel EtherExpress 16-bit Ethernet Card
- Pre-loaded with Novell 3.11 Software

5 User Filesever $3195.00
10 User Filesever $3965.00
20 User Filesever $4495.00



Please call for different configurations for Fileserver or workstations.

WorkStation:

ESSENCE 386DX-40MHz System
- 386DX-40MHz M/B w/64K Cache
- 4MB Memory
- TEAC 1.2M & 1.44M FDD
- 14" SuperVGA Monitor w/1MB VGA Card
- 2 Serial / 1 Parallel Ports
- Mini Tower Case w/230Watts PS
- Enhanced 101 Keys Keyboard
- Intel EtherExpress 16-bit Ethernet Card

$995 per station

ESSENCE 386SX-33MHz System
- 386SX-33MHz M/B
- 2MB Memory
- TEAC 1.2M & 1.44MB FDD
- 14" VGA Monitor w/256K VGA Card
- 2 Serial / 1 Parallel Ports
- Mini Tower Case w/230Watts PS
- Enhanced 101 Keys Keybaord
- Intel EtherExpress 16-bit Ethernet Card

$695 per station

At Essence, we provide you with quality, reliability and value .....

- ❑ **CNE In-House or On-site Service**
- ❑ **Quality Systems & Excellent Service**
- ❑ **Network Training (Novell classes)**
- ❑ **Leasing Plan available**
- ❑ **Maintenance Contracts**
- ❑ **Novell Authorized Dealer**

This Month Specials:

$489

Turn your PC into the ultimate entertainment experience.
Fusion CD 16 from Media Vision brings it all together - the power of rich CD sound and realistic 3-D graphics - into an exhilarating learning and entertaining experience. So now you can enjoy all the latest CD-ROM games and educational programs, as well as your favorite music CDs, all on your DOS or Windows based home computer! It's great fun and excitement for the entire family.
A complete value-packed system.
Fusion CD 16 gives everything you need - including high-performance hardware for amazing sound and stunning graphics.
- Fast SONY internal CD-ROM player
- Media Vision's awarding-winning PC stereo sound card
- High-quality Labtec amplified speaker system
- Plus best-selling CD games and educational programs

INFINITI

Question:
What good is a system with VESA local bus motherboard, VESA local bus SuperVGA video card, but with a regular SuperVGA color monitor that does not meet VESA standards?
Answer:
Infiniti now has a VESA standard SuperVGA Non-Interlaced color monitor, the IN8828N4 to compliment your VESA local bus systems. The IN8828N4 monitor provides true VESA standard flicker-free displays. Manufactured by **Proton**, a premier brand in Audio-Video electronic products, you can be assured only the highest quality is delivered.

IN8828N4 major features:
14" non-glare, .28 dot pitch non-interlaced
Maximum resolution up to **1280x1024** (not 1024x768!)
Compatible with VESA standards
Compatible with Apple Macintosh II (optional cable)
Horizontal sync 30 - 50KHz
Vertical sync 44 - 100Hz
Universal Power Supply 110 - 220 externally switchable

$305

Zoltrix

Zoltrix 14400/14400 Internal High Speed Fax/Data Modem

Fax Features:
- Send and receive Fax message to or from any Group 3 Fax machine/ Fax cards
- Auto detect incoming fax or modem calls
- supports multiple file formats: ASCII, PCX, TIFF, IMG, BFX, DCX, TIFF class F
- Read word processing files directly
- Busy auto redial

Modem features:
- AT command set compatible
- V.42bis, MNP class 5
- V.42 Error correction: fully compliant with LAP-M and MNP class protocols

$199

ESSENCE GROUP

17815 Newhope Street, Suite G, Fountain Valley, CA 92708
Order Hot Line: 1-714-546-3110 ✧ Technical Support: 1-714-546-7902 ✧ Fax Order Line: 1-714-546-3803

SYSTEM BOARDS (0K)

VESA Local Bus System Boards (w/CPU)

Orchid 486DX2-66MHz VESA Local Bus M/B w/256K Cache	$925.00
Orchid 486DX-50MHz VESA Local Bus M/B w/256K Cache	$830.00
Orchid 486DX-33MHz VESA Local Bus M/B w/256K Cache	$680.00
VEGA Baby 486DX2-66MHz VESA Local Bus M/B w/256K Cache	$800.00
VEGA Baby 486DX-50MHz VESA Local Bus M/B w/256K Cache	$705.00
VEGA Baby 486DX-33MHz VESA Local Bus M/B w/256K Cache	$560.00
EFAR Baby 486DX2-66MHz VESA Local Bus M/B w/256K Cache	$745.00
EFAR Baby 486DX-33MHz VESA Local Bus M/B w/256K Cache	$500.00
Hint Baby 486DX2-66MHz EISA VESA Local Bus M/B w/256K Cache	$790.00
Hint Baby 486DX-33MHz EISA VESA Local Bus M/B w/256K Cache	$545.00

VESA Local Bus Video Cards & Controllers:

ATi VLB mach 32 VESA Local Bus Accelerator w/2MB	$410.00
Genoa 1MB VESA Local Bus Graphics Accelerator	$145.00
Oak 093 1MB VESA Local Bus Graphics Accelerator	$125.00
Orchid Fahrenheit VESA Local Bus Windows Accelerator w/1MB	$195.00
VESA Local Bus IDE with Multi I/O Card	$58.00
Tekram DC-680 VESA Local Bus IDE Caching Controller (up to 16MB)	$215.00

EISA Bus & EISA Local Bus System Boards (w/CPU)

VEGA Baby 486DX2-66MHz EISA M/B w/256K Cache (USA made)	$960.00
VEGA Baby 486DX-50MHz EISA M/B w/256K Cache (USA made)	$865.00
VEGA Baby 486DX-33MHz EISA M/B w/256K Cache (USA made)	$720.00
OPTI Baby 486DX2-66MHz EISA Local Bus M/B w/256K Cache	$910.00
OPTI Baby 486DX-50MHz EISA Local Bus M/B w/256K Cache	$815.00
OPTI Baby 486DX-33MHz EISA Local Bus M/B w/256K Cache	$670.00
- ET-4000 1MB Local Bus VGA Card (33, 50 or 66MHz)	$125.00
- S3 1MB Local Bus Graphics Accelerator (33 or 66MHz)	$225.00
- S3 1MB Local Bus Graphics Accelerator (50MHz only)	$255.00

ISA Bus System Boards (w/CPU)

VEGA Baby (3)486DX2-66MHz M/B w/256K Cache (USA made)	$770.00
VEGA Baby (3)486DX-50MHz M/B w/256K Cache (USA made)	$670.00
VEGA Baby (3)486DX2-50MHz M/B w/256K Cache (USA made)	$640.00
VEGA Baby (3)486DX-33MHz M/B w/64K Cache (USA made)	$493.00
VEGA Baby (3)486SX-25MHz M/B w/64K Cache (USA made)	$348.00
VEGA Baby 3(4)86DX-40MHz M/B w/64K Cache (USA made)	$238.00
VEGA Baby 3(4)86DX-33MHz M/B w/64K Cache (USA made)	$238.00
OPTI Mini 486DX2-66MHz M/B w/256K Cache (Write-back cache)	$725.00
OPTI Mini 486DX-50MHz M/B w/256K Cache (Write-back cache)	$625.00
OPTI Mini 486DX2-50MHz M/B w/256K Cache (Write-back cache)	$595.00
OPTI Mini 486DX-33MHz M/B w/128K Cache (Write-back cache)	$450.00
OPTI Mini 486SX-25MHz M/B w/128K Cache (Write-back cache)	$305.00
Symphony Mini 486DX2-66MHz M/B w/256K Cache	$730.00
Symphony Mini 486DX-50MHz M/B w/256K Cache	$635.00
Symphony Mini 486DX2-50MHz M/B w/256K Cache	$600.00
Symphony Mini 486DX-33MHz M/B w/64K Cache	$455.00
Symphony Mini 486SX-25MHz M/B w/64K Cache	$310.00
UMC Mini 486DLC-40 M/B w/64K Cache (Cyrix 486DLC-40 CPU)	$365.00
UMC Mini 486DLC-33 M/B w/64K Cache (Cyrix 486DLC-33 CPU)	$215.00
ALI Mini 486DLC-40MHz M/B w/64K Cache	$335.00
ALI Mini 486DLC-33MHz M/B w/64K Cache	$300.00
OPTI Mini 386DX-40MHz M/B w/128K Cache (Write-back cache)	$184.00
UMC Mini 386DX-40MHz M/B w/128K Cache (Write-back cache)	$183.00
OPTI Mini 386DX-33MHz M/B w/128K Cache (AMD CPU)	$184.00
UMC Mini 386DX-33MHz M/B w/128K Cache (AMD CPU)	$182.00
**** 256K Cache upgrade from 64K for all 486 and 386 M/B*	*$45.00*
**** 256K Cache upgrade from 128K for all 486 and 386 M/B*	*$30.00*
OPTI Mini 386SX-40MHz MB w/16K Cache	$152.00
MX Mini 386SX-40MHz M/B	$127.00
OPTI Mini 386SX-33MHz M/B	$127.00
PC Mini 386SX-33MHz M/B	$110.00
C & T Mini 386SX-25MHz M/B	$122.00

ADD-ON BOARDS

Mono/Graphics/Printer Card	$15.00
AVGA-1 VGA Card w/256K	$27.00
AVGA-3 1MB Graphics Accelerator	$72.00
TVGA-9000 VGA Card w/256K (Trident 9000 Chipset,upto 512K)	$35.00
TVGA-8900CL 1MB SuperVGA Card (2x faster than Trident 8900C)	$65.00
PVGA-1C VGA Card w/256K (WD90C11 Chipset,upto 512K)	$49.00
PVGA-1D SuperVGA Card w/1MB (WD90C30 Chipset)	$78.00
PVGA-1DW Graphics Accelerator w/1MB & Hi-Color Chip	$115.00
ATi Graphics Ultra Plus (1280x1024, 2MB Dram)	$330.00
ATi Graphics Ultra Pro (1280x1024 Non-Interlaced, 2MB VRam)	$430.00
ATi Graphics Ultra Pro EISA w/2MB VRAM	$565.00
Diamond SpeedStar-24X 1MB VGA Card (16Million colors)	$176.00
Diamond Stealth-24 1MB Windows Accelerator (16Million colors)	$185.00
Orchid Pro-Designer IIs 1MB VGA Card w/Sierra RAMDAC	$142.00
Orchid Pro-Designer IIs-E 1MB EISAVGA Card w/Sierra RAMDAC	$165.00
Orchid Fahrenheit Windows Accelerator (24-bit, 16.7Mil colors) w/1MB	$175.00
Orchid Fahrenheit-VA Windows Accelerator with Voice Annotation w/1MB - 24bit, 16.7Million colors, 1280x1024, Audio capabilities	$209.00
AT I/O (2 Serial 1 Parallel 1Game) Card	$14.00
Parallel (Printer) Card	$10.00
AT IDE Adapter (Dual floppy & hard disk) w/Cable	$15.00
AT IDE Adapter w/2.88M FDD Controller & Cable	$52.00
AT Super IDE IO Adapter (Dual floppy & hard disk, 2S, 1P, 1G)	$20.00
GSI-11V 2.88M Four (4) Floppy Controller & Cable	$65.00
GSI-21V 2.88M Four (4) Floppy & Intelligent IDE Adapter w/Cable	$75.00
Promise IDE Caching Controller (512K,upto 8.5MB,2FD/2HD)	$123.00
Tekram DC-600B ISA IDE Caching Controller (up to 16MB)	$155.00
Tekram DC-680 VESA Local Bus IDE Caching Controller (up to 16MB)	$215.00
DTC-2290 EISA IDE Floppy/Hard Disk Contorller	$120.00
DTC-3290 EISA SCSI Caching FD/HD Controller (0K,upto 4MB)	$370.00
DTC-3292 EISA SCSI FD/HD Controller	$325.00
UltraStor 15C IDE Caching FD/HD Controller w/0MB (upto 8MB)	$195.00
UltraStor 14F SCSI FD/HD Controller	$220.00
UltraStor 24F EISA SCSI FD/HD Controller	$350.00
UltraStor 34F VESA Local Bus SCSI FD/HD Controller	$295.00
Future Domain 1670 16-bit SCSI Floppy/Hard Disk Adapter Kit	$158.00
Always IN-2000 16-bit SCSI Host Adapter (Novell Certified)	$189.00
ADAPTEC AHA-1522BK SCSI Adapter Kit	$160.00
ADAPTEC AHA-1542BK SCSI Bus Master Host Adapter Kit	$260.00
ADAPTEC AHA-1542BK-Plus SCSI Bus Master Host Adapter Kit	$325.00
ADAPTEC AHA-1742AK EISA SCSI Bus Master Adapter Kit	$419.00

MONITORS

AcerView 11 14" VGA Monitor (640x480,.39dp)	$238.00
AcerView 33D 14" SuperVGA Color Monitor (1024x768,.28dp)	$288.00
AcerView 34T 14" Non-Interlaced Monitor (1024x768,.28dp)	$328.00
AcerView 35 14" SuperVGA Monitor (1024x768,.26dp)	$460.00
AcerView 56L 15" Digital Multi-Frequency Color Monitor (.28dp)	$490.00
CTX5439A 14" SuperVGA Color Monitor (1024x768,.39dp)	$238.00
CTX5468A 14" SuperVGA (TriScan) Color Monitor (1024x768,.28dp)	$280.00
CTX5468NI 14" Non-Interlaced Color Monitor (1024x768,.28dp)	$305.00
CTX1461 14" Non-Interlaced Color Monitor (1024x768, 72Hz refresh)	$325.00
CTX1560 15" Digital Non-Interlaced Color Monitor (1024x768,.28dp)	$455.00
CTX1760 17" Digital Flat-Screen Color Monitor (1280x1024,.28dp)	$805.00
MAG 1564 15" Color Monitor (1280x1024,.28dp0	$490.00
MAG MX-15H 15" Color Monitor (1280x1024,.28dp)	$565.00
MAG MX-17H 17" Color Monitor (1280x1024,.28dp)	$1035.00
NEC MultiSync 3FGx 15" Color Monitor (1024x768,.28dp)	$625.00
NEC MultiSync 4FG 15" Color Monitor (1024x768,.28dp)	$750.00
NEC MultiSync 5FG 17" Color Monitor (1280x1024,.28dp)	$1315.00
NEC MultiSync 6FG 21" Color Monitor (1280x1024,.28dp)	$2350.00
Sony CPD-1304S 14" MultiScan Monitor (Non-Interlaced,.25dp)	$590.00
Sony CPD-1604S 17" MultiScan Monitor (Non-Interlaced,.25dp)	$995.00
Mini-Micro MM1467L 14" Paper-white MonoVGA Monitor	$124.00
ViewSonic 4E 14" SuperVGA Color Monitor (1024x768,.28dp)	$295.00
ViewSonic 6 14" Non-Interlaced Color Monitor (1024x768,.28dp)	$335.00
ViewSonic 6E 14" Non-Interlaced Color Monitor (1024x768,.28dp)	$328.00
Viewsonic 5E 14" Non-Interlaced Color Monitor (1024x768,72Hz refresh)	$395.00
ViewSonic 6FS 15" Digital Multi-Frequency Color Monitor	$545.00
ViewSonic 7 17" Digital Multi-Frequency Color Monitor (.28dp)	$985.00
ViewSonic 8 20" Digital Multi-Frequency Color Monitor (.31dp)	$1575.00

FLOPPY & HARD DRIVES

TEAC 1.2MB FDD (5.25")	$55.00
TEAC 1.44MB FDD (3.5") w/Mounting Kit	$50.00
TEAC 2-in-1 1.2/1.44MB FDD	$129.00
TEAC 2.88MB FDD (3.5") w/Mounting Kit	$90.00
Mitsumi 1.2MB FDD (5.25")	$50.00
Mitsumi 1.44MB FDD (3.5") w/Mounting Kit	$46.00
Conner CP-3000 40MB IDE HDD (29ms)	$150.00
Conner CP-30084 80MB IDE HDD (17ms)	$200.00
Conner CP-30104 120MB IDE HDD (17ms)	$248.00
Conner CP-30174 170MB IDE HDD (17ms)	$275.00
Conner CP-30204 210MB IDE HDD (12ms,256K cache buffer)	$350.00
Conner CP-30254 251MB IDE HDD (14ms,64K cache buffer)	$390.00
Conner CP-3544 520MB IDE HDD (12ms,256K cache buffer)	$880.00
Conner CP-3540 520MB SCSI HDD (12ms,256K cache buffer)	$890.00
Fujitsu M2624T 520MB IDE HDD (12ms, 5yr warranty)	$860.00
Fujitsu M2624FA 520MB SCSI HDD (12ms, 5 yr warranty)	$975.00
Fujitsu M2266SA 1.2GB SCSI HDD (12ms, 5yr warranty)	$1345.00
Fujitsu M2652S 2.0GB SCSI HDD (12ms, 5yr warranty)	$2175.00
Maxtor MX-7120A 120MB IDE HDD (15ms)	$255.00
Maxtor MX-7120S 120MB SCSI HDD (15ms)	$265.00
Maxtor MX-7213A 213MB IDE HDD (15ms)	$350.00
Maxtor MX-7213S 213MB SCSI HDD (15ms)	$365.00
Maxtor MX-7245A 245MB IDE HDD (15ms)	$380.00
Maxtor LXT-340A 340MB IDE HDD (13ms)	$575.00
Maxtor LXT-340S 340MB SCSI HDD (13ms)	$585.00
Maxtor LXT-535A 520MB IDE HDD (13ms)	$885.00
Maxtor LXT-535S 520MB SCSI HDD (13ms)	$890.00
Maxtor MX-540SL 540MB SCSI HDD (8.5ms)	$1045.00
Maxtor XT-8760SH 675MB SCSI HDD (16.5ms)	$1160.00
Maxtor MXT-1240S 1.2GB SCSI HDD (8.5ms)	$1865.00
Maxtor PO-12 1.2GB SCSI HDD (13ms)	$1385.00
Maxtor P1-17S 1.7GB SCSI HDD (13ms)	$1575.00
Quantum ProDrive ELS 42MB IDEHDD (19ms)	$155.00
Quantum ProDrive ELS 85MB IDE HDD (17ms)	$200.00
Quantum ProDrive ELS127MB IDE HDD (17ms)	$260.00
Quantum ProDrive ELS 170MB IDE HDD (17ms)	$290.00
Western Digital AC280 80MB IDE HDD (17ms)	$210.00
Western Digital AC2120 120MB IDE HDD (15ms)	$260.00
Western Digital AC2170 170MB IDE HDD (14ms)	$290.00
Western Digital AC2200 209MB IDE HDD (13ms)	$345.00
Western Digital AC2340 340MB IDE HDD (13ms)	$535.00
SyQuest SQ555 44MB SCSI Removable Disk Drive	$290.00
SyQuest SQ5110 88MB SCSI Removable Disk Drive	$345.00
SyQuest SQ400 44MB Cartridge	$75.00
SyQuest SQ800 88MB Cartridge	$108.00
SyQuest SQ01 SCSI Adapter w/Software	$45.00
SyQuest External Kit	$115.00
Colorado Memory System JT-10 120MB Parallel Port Tape Backup	$355.00
Colorado Memory System JT-20 250MB Parallel Port Tape Backup	$420.00
Colorado Memory System DJ-10 120MB Tape Backup	$169.00
Colorado Memory System DJ-20 250MB Tape Backup	$219.00
Colorado Memory System AB-11 External Adapter Kit	$39.00
Colorado Memory System KE-09 External Drive Kit	$80.00
Colorado Memory System FC-10 500Kb/s-1Mb/s Adapter Kit	$90.00
Colorado Memory System TC-15 Data Compression Adapter Kit	$189.00
Summit Sb-120 120MB Tape Backup w/PC Tool Backup Software	$179.00
Summit SE-250 250MB Tape Backup w/PC Tool Backup Software	$229.00
Summit SE-305 305MB IDE Tape Backup w/SummitSafe Software	$308.00
3M DC2120 120/250MB Mini Data Cartridge	$20.00
Mitsumi CRMC Internal CD-ROM w/Interface (350ms)	$219.00
NEC CDR-74 External SCSI CD-ROM/MPC	$625.00
NEC CDR-84 Internal SCSI CD-ROM/MPC	$560.00
Sony CDU-31A Internal CD-ROM Drive w/Interface	$260.00
Sony CDU-535 Internal CD-ROM Drive w/Interface	$325.00
Sony CDU-541 Internal SCSI CD-ROM Drive	$465.00
Media-Vision Fusion CD-16 Multi-Media System w/SONY 31A CD-ROM	$495.00
SMS Wild Multi-Media System w/SONY 31A CD-ROM & 5 CD titles	$435.00
NEC CD-Express w/NEC CDR-25 CD-ROM reader & 10 CD titles	$445.00
**** CD Package - MultiMedia Encyclopedia, The Animals! (The San Diego Zoo) Reference Library, US Atlas / World Atlas, Monkey Island*	*$100.00*
Labtec CS-15 Shielded amplified micro stereo speakers	$19.50
Labtec CS-550 Shielded stereo micro speakers with built-in power boosters	$27.50
Labtec SS-700 Shielded amplified micro stereo speakers w/3-band EQ	$32.50
Labtec AD-4 400mA AC Adapter (for Labtec Speakers)	$9.95

PRINTERS

Citizen 200GX Printer (9pin/213cps/80col/color option)	$158.00
Citizen GSX-230 Quiet Printer (24pin/color option)	$239.00
Citizen GSX-240 Quiet Printer (24pin/300cps/80col/color option)	$298.00
Citizen GSX-145 Printer (24pin/192cps/132col/color option)	$365.00
**** Color Kit for Citizen 200GX, GSX-230 or GSX-240*	*+45.00*
Hewlett Packard DeskJet 500 InkJet Printer	$415.00
Hewlett Packard DeskJet 550C Color InkJet Printer	$735.00
Hewlett Packard LaserJet IIP Plus Laser Printer	$790.00
Hewlett Packard LaserJet IIIP Laser Printer	$975.00
Hewlett Packard LaserJet IV Laser Printer	$1435.00
NEC SilentWriter Model 95 w/2MB Postscript Printer	$1395.00
NEC SilentWriter Model 97 w/2MB Postscript Printer (10ppm)	$1745.00
Panasonic KX-P1123 Printer (24pin/240cps/80col)	$198.00
Panasonic KX-P1124i Printer (24pin/300cps/80col)	$289.00
Panasonic KX-P2180 Quiet Printer (9pin/240cps/80col/color option)	$178.00
Panasonic KX-P2123 Quiet Printer (24pin/240cps/80col/color option)	$242.00
Panasonic KX-P2124 Quiet Printer (24pin/320cps/80col/color option)	$318.00
Panasonic KX-P2624 Quiet Printer (24pin/300cps/132col)	$398.00
**** Color Kit for Panasonic KX-P2180, KX-P2123 or KX-P2124*	*+45.00*
Panasonic KX-P4410 Laser Printer (5ppm/512K/300dpi)	$625.00
Panasonic KX-P4430 Laser Printer (5ppm/1MB/300dpi)	$895.00
Okidata OL400P LED Page Printer	$598.00
Okidata OL810 LED Page Printer	$1048.00
Okidata OL830 LED Page Printer	$1278.00
Okidata OL840 Postscript Printer	$1598.00
Star NX-1001 Multi-Font Printer (9pin/180cps/80col)	$139.00
Star NX-2430 Multi-Font Printer (14pin/240cps/80col)	$228.00
Star NX-2420R Rainbow Color Priner (24pin/250cps/80col)	$289.00

KEYBOARDS

BTC 5339SX 101keys Keyboard	$25.00
Focus-2001 101keys Keyboard w/Hard Dustcover (Click)	$42.00
Focus-6000 101keys Keyboard (Soft click)	$36.00
Focus-8000 111keys Keyboard (Calculator, Soft click)	$46.00
Focus-9000 128keys Keyboard (Programmable, Click)	$69.00
Fujitsu-4700 101keys Keyboard	$47.00
Honeywell-101WN 101keys Keyboard (3yr. warranty)	$40.00
KT-2000 101keys Keyboard (Keytronic made)	$42.00
Kanrich M-102 102 keys Keyboard	$22.00
MaxSwitch 101 keys Keyboard	$35.00
MaxiSwitch 124keys Programmable Keyboard	$69.00

CHASIS (CASES)

CS-20 Baby AT Case w/200W UL P.S. (3x5.25",2x3.5")	$84.00
CS-35 Mid Vertical Case w/230W UL P.S. (3x5.25",3x3.5",Digital)	$95.00
CS-36 Full Vertical Case w/230W UL P.S. (6x5.25",2HD,Digital)	$129.00
CS-300GTS Full Vertical Case w/300W UL P.S. (7x5.25", Double fan)	$185.00
CS-510 Baby AT Case w/200W P.S. (3x5.25",1x3.5")	$65.00
CS-931 Mini Vertical Case w/230W P.S. (2x5.25",3x3.5",Digital)	$64.00
CS-932 Mini Vertical Case w/230W P.S. (2x5.25",3x3.5")	$62.00
CS-923 Mid Vertical Case w/230W P.S. (3x5.25",3x3.5",Digital)	$84.00
CS-912 Full Vertical Case w/230W UL P.S. (4x5.25",2HD,Digital)	$118.00
Diamond Series: (Black color model available +$3.00)	
CS-130 Full Vertical Case w/250W UL P.S. (4x5.25",2HD,Digital)	$145.00
CS-230 Mid Vertical Case w/250W UL P.S. (4x5.25",2HD,Digital)	$135.00
CS-330 Mini Vertical Case w/220W UL P.S. (2x5.25",3x3.5",Digital)	$86.00
CS-530 Dsktop Case w/250W UL P.S. (2x5.25",2x3.5",2HD,Digital)	$98.00
CS-730 Baby AT Case w/220W UL P.S. (2x5.25",1x3.5,1HD,Digital)	$90.00
CS-830 Slim Line Case w/220W UL P.S. (1x5.25",1x3.5",1HD,Digital)	$89.00
2nd Fan for Diamond Series cases (CS-130,CS-230,CS-530)	*$10.00*

Honeywell 3-buttom Serial Mouse	$45.00
Logitech Dexxa Mouse	$24.00
Logitech Bus MouseMan	$66.00
Logitech PS-2/Serial Combo MouseMan	$68.00
Logitech Trackman II (Serial)	$84.00
Logitech Trackman Portable	$102.00
MicroSoft Serial Mouse	$78.00
MicroSoft Bus Mouse	$90.00
MicroSoft BallPoint Mouse for Notebook computer	$105.00
Intel SatisFAXtion model 100 Internal Fax Modem	$105.00
Intel SatisFAXtion model 200 Internal Fax Modem	$305.00
Intel SatisFAXtion model 400 Internal Fax Modem	$415.00
Intel SatisFAXtion modem 400 External Fax Modem	$455.00
U.S. Robotics Sportster 9600PC Internal Data Modem	$274.00
U.S. Robotics Sportster 9600 External Modem	$302.00
U.S. Robotics Sportster 14400PC Internal Data Modem	$305.00
U.S. Robotics Sportster 14400 External Data Modem	$330.00
U.S. Robotics Sportster 14400/9600 Internal Data/Fax Modem	$325.00
U.S. Robotics Sportster 14400/9600 External Data/Fax Modem	$355.00
Zoltrix 2400i Internal 2400Baud Data Modem	$34.00
Zoltrix Standard Internal 9600SR/2400 Send/Receive Fax/Data Modem	$60.00
Zoltrix Standard Internal 9600SR/2400 Send/Receive Fax/Data Modem -w/BitFax for Windows	$62.00
Zoltrix Enhanced Internal 9600SR/2400 Send/Receive Fax/Data Modem - with Hardware MNP5 & V.42bis	$92.00
Zoltrix Pocket 9600SR/2400 Send/Receive Fax/Data Modem	$108.00
Zoltrix 14400/14400bps Internal V.32/V.42bis/MNP5 Data/Fax Modem	$205.00
Zoltrix 14400/14400bps External V.32/V.42bis/MNP5 Data/Fax Modem	$228.00
Acorex 9600bps Internal V.32/V.42bis/MNP5 Data Modem	$175.00
Acorex 9600bps External V.32/V.42bis/MNP5 Data Modem	$195.00
Acorex 14400/9600SR Internal Data/Fax Modem	$205.00
Acorex 14400/9600SR External Data/Fax Modem	$230.00
Cyrix 83S87-16 / IIT 3C87SX-16 Math Coprocessor	$69.00 / $69.00
Cyrix 83S87-25 / IIT 3C87SX-25 Math Coprocessor	$74.00 / $72.00
Cyrix 83S87-33 / IIT 3C87SX-33 Math Coprocessor	$79.00 / $77.00
Cyrix 83D87-25 / IIT 3C87DX-25 Math Coprocessor	$80.00 / $76.00
Cyrix 83D87-33 / IIT 3C87DX-33 Math Coprocessor	$88.00 / $79.00
Cyrix 83D87-40 / IIT 3C87DX-40 Math Coprocessor	$99.00 / $89.00
Intel 387SX Math Coprocessor	$85.00
Intel 387DX Math Coprocessor	$90.00

intel inside

Quality You Can Count On!!!

BOLD

DATA TECHNOLOGY. INC.
Computer Systems
Components
Peripherals

BDT-486SX-33 MHz

$1079

- BDT Basic Package
- BDT 486SX-33 Motherboard
- BDT 486SX-33 CPU on board
- AMI Bois
- Baby AT DeskTop or Mini Tower Case With 230W Power Supply

BDT-486SX-25Mhz

$1029

- BDT Basic Package
- BDT 486SX-25 MotherBoard
- Intel 486DX-25 CPU on Board
- AMI Bois
- Baby AT DeskTop or Mini Tower Case With 230W Power Supply

BDT-486DX-33Mhz

$1239

- BDT Basic Package
- BDT 486DX-33 MotherBoard
- Intel 486DX-33 CPU on Board
- 64K Write Back Cache
- AMI Bois
- Mini or Medium Tower Case With 230W Power Supply

BDT-486DX-50Mhz

$1359

- BDT Basic Package
- BDT 486DX-50 MotherBoard
- Inte CPU on Board
- 256K Write Back Cache
- AMI Bois
- Tower Case With 250W Power Supply

All Basic Systems Include:

- 4MB of 70ns RAM
- 1.2 and 1.44 Floppy Disk Drive
- 80MB IDE Hard Disk Drive
- 2 FDD and 2 HDD 1:1 IDE Controller
- 2 Serial, 1 Parallel and 1 Game Port
- VGA Card with 512K on Board
- 14" VGA Monitor
- 101 Key Enhanced KeyBoard

Upgrade Options:

– 14" Super VGA Monitor with 1MB SVGA Card	+$90
– 14" Super VGA Monitor with Window Accelerator Card	+$175
– 120MB IDE Hard Disk Drive	+$60
– 200MB IDE Hard Disk Drive	+$240

BOLD DATA TECHNOLOGY

The Intel Logo is a Registered Trademark of Intel Corporation

920 Auburn Ct.
Fremont, CA 94538
Tel: (510) 490-8296
Fax: (510) 490-9428

13200 Brooks Dr. Suite H
Baldwin Park, CA 91706
Tel: (818) 338-2878
Fax: (818) 338-1178

PRODUCT SPOTLIGHT

Continued from page 98

at the end of the day or just to add color to your work environment when you are not using your Mac. Made from brightly colored, machine washable, 100% cotton fabrics, they provide protection against dust, sunlight, and cookie crumbs. They come in both crazy and conservative prints. NiteCap covers include sizes for all compact Macs, IIci, IIsi, IIcx, and many PC compatibles. Covers are also available for keyboards and printers. NiteCaps, Inc., 28A Woodland Ave., San Francisco, CA 94117. (415)665-0668.

REVIEWS

GAMES

By Mike Markowitz

WAXWORKS

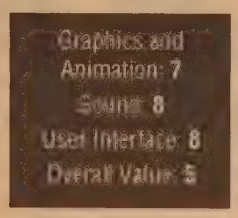
Designed By: HorrorSoft (UK): Mike Woodroffe, Alan Bridgeman, and Simon Woodroffe
Published By: Accolade
For: MS-DOS (640K, 16MHz 386SX or faster processor, EGA or VGA graphics, mouse recommended, popular audio cards supported)
List Price: $59.95

Uncle Boris has just died, leaving you his

WaxWorks, a creepy Victorian mansion filled with his collection of wax monsters, criminals, witches, and ungrateful Undead. Your mission is to plunge into the alternate realities concealed in the WaxWorks in search of your twin brother, who was lost in a cave years ago.

To complete the game, you have to explore the WaxWorks and then survive and master four "quests": rescue a princess trapped inside the Great Pyramid, track down Jack the Ripper in nineteenth-century London, descend into an iron mine to destroy a man-eating mutant plant, and finally, enter a graveyard to defeat an evil Necromancer and his hordes of zombies.

The program was developed by HorrorSoft, the same British team that designed the Elvira games for Accolade. If you liked those, you'll love this one. The box carries a titillating cautionary label: PARENTAL WARNING: INTENSE GRAPHIC VIOLENCE. If you can wade through all the gore and slime, there are endless hours of intricate puzzles and challenging obstacles to overcome.



WaxWorks is installed from compressed files on four high-density 5.25" disks. After installation it requires almost 10MB of disk space.

The screen consists of a central window showing an "in-your-face" first-person view of the action, an inventory window showing the objects you have collected, and various

Continued

Datamini SYSTEM

QUALITY AND RELIABILITY

486-50 DX LOCAL BUS
- 80486DX-50 CPU
- 256K Cache
- 4MB Memory 70n/s
- 170MB IDE Drive
- Floppy 1.2 & 1.44 FD
- 32 Bit Local Bus Video Card
- Super IDE I/O
- 14" Interlaced SVGA Monitor, .28 dpi
- Mini Tower Case Digital
- Enhanced 101KB

$1569.00

486-50 DX INTEL CPU
- 80486DX-50 CPU
- 256K Cache
- 4MB Memory 70n/s
- 170MB IDE Drive
- Floppy 1.2 & 1.44 FD
- S.V.G.A. 1MB Trident
- Super IDE I/O
- 14" Interlaced SVGA Monitor, .28 dpi
- Mini Tower Case Digital
- AT 101 Keyboard

$1399.00

486-33 DX LOCAL BUS
- 80486DX-33 CPU
- 256K Cache
- 4MB Memory 70n/s
- 170MB IDE Drive
- Floppy 1.2 & 1.44 FD
- 32 Bit Local Bus Video Card
- Super IDE I/O
- 14" Interlaced SVGA Monitor, .28 dpi
- Mini Tower Case Digital
- Enhanced 101KB

$1339.00

486-33DX INTEL CPU
- 80486DX-33 CPU
- 256K Cache
- 4MB Memory 70 n/s
- 170MB IDE Drive
- Floppy 1.2 & 1.44 FD
- Trident w/1MB
- Super IDE I/O
- 14" SVGA Monitor, .28 dpi
- Mini Tower Case Digital Display
- AT 101 KB Enhanced

$1259.00

386-40DX
- 80386DX-40 CPU
- 128K Cache
- 4MB Memory 70 n/s
- 170MB IDE Hard Drive
- Floppy 1.2 & 1.44 FD
- Trident w/1MB
- Super IDE I/O
- 14" SVGA Monitor, .28 dpi
- Mini Tower Case Digital Display
- AT 101 KB Enhanced

$999.00

386SX-33
- 80386SX-33 CPU
- 2MB Memory 70 n/s
- 42MB IDE Hard Drive
- Floppy 1.2 & 1.44 FD
- 16 bit SVGA w/256K
- Super IDE I/O
- 14" SVGA Monitor
- Mini Tower Case Digital Display
- 101 KB Enhanced

$689.00

486-33DLC MHZ 256K CACHE

CPU CYRIX
80486DLC-33 CPU
256K Cache
4MB Memory 70 n/s
170MB IDE Drive
Floppy 1.2 & 1.44 FD
Trident w/1MB
Super IDE I/O
14" SVGA Monitor
.28 dpi
Mini Tower Case
Digital Display
AT 101 KB Enhanced

$1149.00

HP LASER and OKIDATA PRINTER

CALL AND ASK FOR OUR LASER PRINTER PRICES

MOTHER BOARD

386-40 MHZ 64Cache	$159.00
386-33 SX	$99.00
486-33 DX INTEL	$449.00
486-33 DLC Cyrix	$339.00
486-50 MHZ DX Intel	$599.00

OTHER

SIMMS 70 N.S	$ 29.00
FAX MODEM	$52.00

HARD DISK

42 MB IDE	$139.00
80 MB IDE	$189.00
105 MB IDE	$209.00
130 MB IDE	$239.00
213MB IDE	$329.00

MONITOR

SVGA 0.39		$205.00
SVGA 0.28		$235.00
SVGA (NI) 0.28		$269.00
IBM VGA	12"	$149.00

PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE

One year parts & labor warranty

WHOLE SALE DISTRIBUTORS
KAMFOZ
COMPUTER SYSTEMS
14612 Crenshaw Blvd.
Gardena, CA 90249
Phone (310) 769-1970
FAX (310) 523-9190

NEW & USED COMPUTER SYSTEMS

Networks • Workstations • Stand Alones
PC-AT-386-486 Systems & Parts
Personal • Business • Home • Office
Upgrades & Trade-ins Available
Electronic Components • Wholesale Prices

REPAIR SERVICE • Service Contracts • On Site & Depot Repair

HACKER ELECTRONICS (818) 882-7980
21016 Devonshire • Chatsworth, CA

PCW WAREHOUSE

Over 85 stores nationwide and 650 specialists worldwide

"The Total Solution," Service & Upgrades.

Start-to-finish consultation, installation, service and support for business systems.

NEC, Toshiba, Sony, Panasonic... All the Best prices

Computer system Top line

NEC Ready 466..$2495 Ready 433..$1749 Ready425..$1399

Intel CPU ,SVGA 1Mb, 4/8Mb RAM , 170/240Mb HDD, 1.44 & 1.2 FDD2S/1P , NEC Low-Radiation , Non-interlaced .28mm monitor , DOS 5.0,WS3.1101-key, NEC mouse , Works/Quicken/Antivirus, Modem 2400 Bps/Prodigy, One year On-Sites

Kenitec Systems

Package includes:

486dx-50 EISA.....$2395
486dx2-66 VESA...$2249
486dx-50 ISA.....$2095
486dx-33 ISA.....$1899

*System include 4MB , 24 0Mb HDD, Dual FDD SVGA acces w/1mb, .28mm Color monitor, 2S/1P/1G, Mouse, 101 K Dos 5.0, Windows 3.1

486sx-25.....$1145
3/486-40.....$1075
386dx-40.....$995
386sx-33.....$899

*System include 2MB 80Mb HDD, 1.2mb & 1.44mb FDD SVGA w/1mb, .28mm Color monitor, 2S/1P/1G, 101 K Dos 5.0,

Notebook

Toshiba

T-1850 4mb/80mb..$1495
T-1850C 4/80mb....$2179
T-1850C 4/120mb..$2295
T-3300SL 2/80mb..$1945
T-4400SX 2/80mb..$2299
T-4400SXC 4/80mb..$2995
T-4400C 4/120mb....$3349
T-4500C 4/120mb....$3645
T-6400DX 4/200mb..$3965
T-6400DXC 4/200mb..$5985

NEC

386SL-20 2/80mb..$1425
386SL-20 120mb....$1599
386SLC-25 2/80mb..$2399
386SLC-25 2/120mb.$2695
486SLC-25 4/120mb.$3295

Printer

Panasonic

KX-P2180... $154
KX-P1123....$184
KX-P2123....$239
KX-P2124....$299
KX-P1624....$329
KX-P2624....$349
KX-P4410....$599
KX-P4430....$829
KX-P4450....$1029
KX-P4451....$1299

Epson

A-2250..... $149
A-3250.....$199
LQ-570.....$249
LQ-870.....$459
LQ-1070.....$369
LQ-1170.....$599
FX-870.....$279
FX-1170.....$379
ACT-1000...$659
ACT-1500...$949

Canon

BJ-10ex...$279
BJ-20.....$369
BJ-200...$359
BJ-300...$429
BJ-330...$559

Citizen

PN-48.....$299
GSX-230..$239
GSX-240..$279

Okidata

OL-400...$589
OL-810..$1099
OL-830..$1299
ML-590...$499
ML-591...$599
ML-393...$909

NEC

SL95...$1369
SL-97..$1659

Multimedia & Monitor

CDR-25..$429
CDR-74..$669
CDR-84..$579

3FGX.....$649
4FG.....$769
5FG.....$1279

1604S 17"..$959
31A-LL/N...$399
31A-LL/L.. $659

SONY
Optical drive
128Mb...$1765

All systems come with a limited one-year warranty, parts and labor. All prices listed are available only at these stores

Santa Fe Springs: 310-926-7363
13340 Firestone Blvd.
(1-5 at Carmenita)

Gardena: 310-516-2098
1355 W. 190th St.
(405 at Normandie)

Thousand Oaks: 805-379-0181
3835R Thousand Oaks Blvd.
(Westlake Blvd., next to Ralphs)

FINANCING AVAILABLE

City of Industry: 818-913-7121
17405 E. Gale Ave.
(E. of Azusa

Encino: 818-907-6476
15617 Ventura Blvd.
(E. of Haskell)

Temple City: 818-285-6663
5817 Rosemead Blvd.
(At Las Tunas)

Corporate sales : 310-516-1163
Government / Education sales
1-800-795-1393 Fax 310-516-1484

controls and status indicators around the edges.

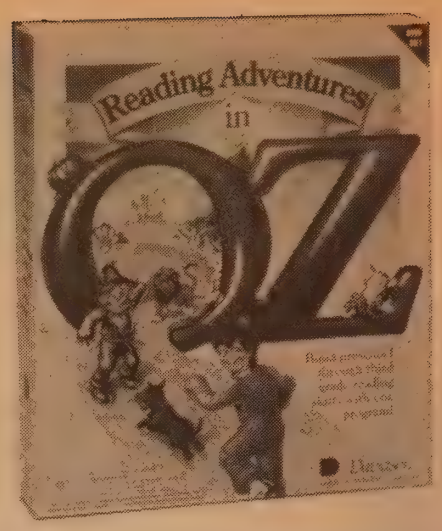
Waxworks is technically impressive, but definitely not for the squeamish. (Accolade, 5300 Stevens Creek Blvd., San Jose, CA 95129. 408/985-1700)

READING ADVENTURES IN OZ

Designed By: Leslie House
Published By: Davidson
For: MS-DOS (640K, 12MHz or faster CPU, VGA graphics and mouse required, popular audio cards supported)
List Price: $59.95 (school lab packs and site licenses also available)

The movie *Wizard of Oz* ruined a great classic of children's literature for an entire generation of Americans. Between 1900 and 1919, L. Frank Baum wrote sixteen books about Dorothy's adventures in the imaginary land of Oz. Thanks to Hollywood, all we ever learned about it was reduced to one screenplay.

Reading Adventures in Oz is a daring attempt to update and revisit this lost (and public domain) classic, in the form of a



learning program for kids from preschool to third grade (ages 4–9). The software is designed to build a variety of reading and problem-solving skills: letter and word recognition, phonics, categorization, rhyming, inference, synonyms, and comprehension. The theory underlying the design of the program is that children learn to understand and use words by experiencing language in a meaningful context. This is what happens when grownups read aloud to kids. As they listen to the story and interact with the storyteller, they learn how words relate to each other.

The program is built around forty detailed and imaginative screens in 256-color VGA. All the screens are tied together by—what else?—the Yellow Brick Road. Click the road near the top of the screen and you go forward; click the road near the bottom of the screen and you go back. In preliminary testing, the design team found that kids spent a lot of time exploring each screen, so there are plenty of hidden objects, sounds, and little animations to discover.

Graphics and Animation: 9
Sound: 9
User Interface: 9
Overall Value: 9

To play, you first select one of four characters: Dorothy, the Scarecrow, the Tin Boy, or the Cowardly Lion. Based on feedback from kids in preliminary testing, the characters were redrawn for greater appeal: Dorothy wears a more contemporary outfit and the Lion is a cub. Your objectives are still the same: Dorothy wants to go home, the Lion needs courage, Tin Boy needs a heart, and Scarecrow needs a brain.

Before the Wizard will grant your wish, you need to find certain things. The clues may be given in the form of rhymes and riddles. When you click on an object, its name appears in a box. You can drag the word into a bag that accompanies you on every screen. If the word matches your current task, it stays in the bag, otherwise it just drifts back to its original place.

You can play the game at three different skill levels. Level 1 is for pre-readers (typically ages 4–5). You can simply explore the screens, learning to associate words with pictures, and discovering hidden objects. At Level 2 (ages 6–7) early readers are exposed to word recognition, rhyming words,

Continued on page 130

Missing Your Copy of MicroTimes?

If you're having trouble finding MicroTimes at your favorite store, why not have it delivered right to your company.
If you're a company that can distribute 50 or more copies per month, just call our distribution department at (510) 934-3700, and ask to have MicroTimes delivered to your doorstep. It's SO EASY!

MICROTIMES

ONE MILE FROM LOS ANGELES INTERNATIONAL AIRPORT

Holiday Inn EXPRESS

$58*

*MICROTIMES SPECIAL

Our Latest Overnight Success

Located minutes from Business Centers, Aerospace Industries and Governmental Agencies, and right off the I-405 Freeway. You can enjoy the array of services offered:

- Courtesy Airport Transportation
- Free Breakfast Bar
- Free Local Area Calls
- Free Movie & News Channel
- Business Services
- Outdoor Pool
- Meeting Room (5-50 Persons)
- Area Restaurants Deliver Free
- Priority Club Benefits

Hotel Direct (310) 671-7213 or Fax (310) 671-1804
Toll Free (800) HOLIDAY ask for LAXAI
4922 W. CENTURY BLVD., INGLEWOOD, CA 90304

ALPHABET CITY

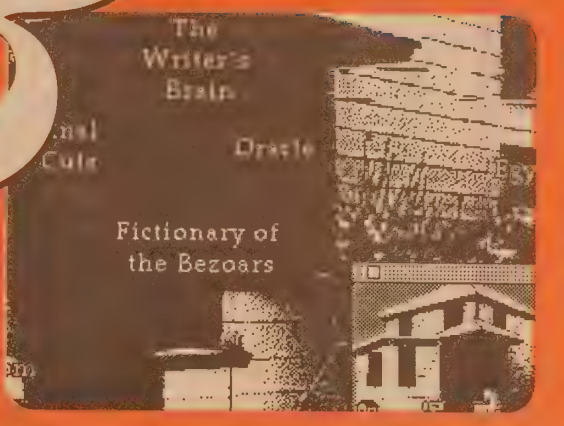
(310) 787-7580

1840 W. 220th St. • Suite 300
Torrance, California 90501

Postscript Services

1200/2400 D.P.I. Output
Color/Grayscale Scanning
Mac and IBM file conversion
Color Separations
Pick up & Delivery
Design & Layout
Typesetting

Multi & Media beyond



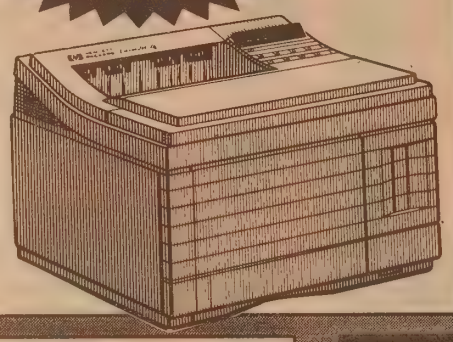
What started with desktop publishing has become a communications revolution for business, entertainment, and social interaction. Multimedia & Beyond will bring you useful, up-to-date information on products, sources, and ideas in every issue of MicroTimes.

Superstore Prices w

A new dimension to printing with Windows.

HP LaserJet 4 printer

IN STOCK
Come in today
for Demo



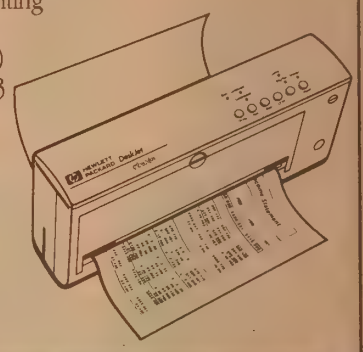
600 x 600 dpi print quality
45 internal scalable fonts
REt and Microfine toner for
superior output quality
8ppm Business Speed
2MB RAM, upgradable to 36MB

HP LaserJet IIIP.....Call

HP DeskJet Portable Printer

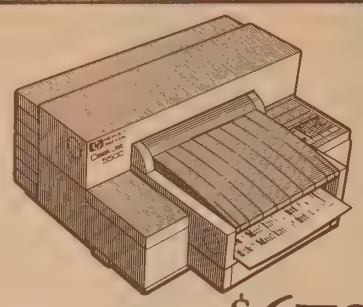
We've got the Perfect Printer to Keep
Your Business Moving.

- 300 dpi, laser quality printing
- Small, lightweight size—
  weighs just 4.4 lb. (2 kg.)
- Fast print speed—up to 3
  pages—per—minute
- Backed by HP reliability
- Optional accessories
  for maximum versatility



$379

All New
HP DeskJet 550C



- 300 x 300 dpi COLOR Printer
- Up to 16 million Colors &
  Solid Black
- Prints on Plain, Special,
  Glossy, Transparency
- Prints up to 3 pages-per-minute

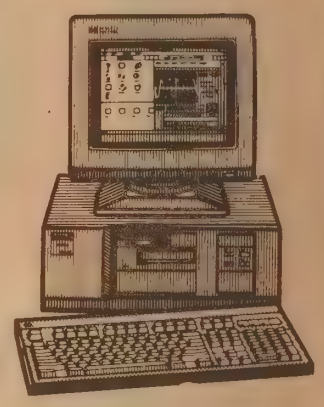
HP DeskJet 500C
HP DeskJet 500 **IN STOCK**

$679

FREE Windows 3.1, DOS 5.0 & HP Mouse with Purchase

HP Vectra 386/25N

$1108*



- Model 80
- Best-in-class 25MHz Intel
  386SX performance
- 4MB RAM
- Three ISA accessory slots
- Two mass-storage shelves

*Monitor Optional

HP LaserJet Fax

$698*

**After $200 Rebate*

- Plain Paper Fax
- Fast 300dpi Printing
- Easy PC Faxing
- HP Quality & Reliability

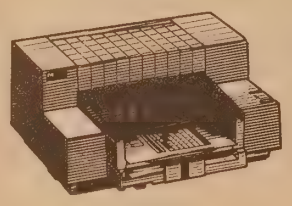
HP Fax 310
Rebate Ends 2/28/93

$1098*
**After $150 Rebate*

NEW LOWER PRICES ON ALL HP VECTRA PC's

3-Year Express Exchange Warranty

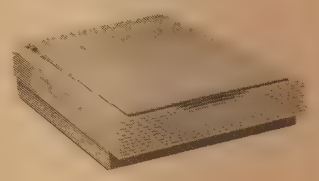
HP DeskWriterC Printer $489
300x300dpi **COLOR** Printer
Prints on plain or special paper
Quality Transparency
HP DeskWriter Printer $409
**After $50 Mail-In Rebate*



HEWLETT PACKARD
Authorized Dealer

One-Year Express Exchange Warranty

HP ScanJet IIc Scanner
For Macintosh
400x400dpi **COLOR** Scanner
Up to 800dpi Enhanced Resolution
Live preview and editing
8.5"x14" Flatbed Scanning
$1209



PC SYSTEMS DESIGN CORPORATION

All Stores Open Mon–Fri 9–7pm, Sat 9:30–7pm

ith Superior Service

Since 1983

Macintosh™ Blowout Super Sale!

The All NEW Apple Macintosh PowerBook 145, 160, 180 and PowerBook Duo 230

Macintosh IIVX 4/80
68030 CPU
33MHz Speed
Modular
Expandable Video
$2498*

Macintosh PowerBook 160
4/40
25MHz, 68030 processor
Built-in networking
2-3 hours battery life
Model 2/80
$2089

Macintosh PowerBook 180
4MB/80MB HD
33MHz, 68030 processor
4MB RAM, upgrade to 14MB
Built-in support for external display
CALL

Mac PowerBook Duo 230
4MB/80MB HD
33MHz, 68030 processor
4MB RAM, upgrade to 24MB
$2279

** With the purchase of a Monitor & Keyboard*

Authorized Dealer

DEMO CLEARANCE SALE

HEWLETT-PACKARD

HP PaintJet Printer **$600**
HP PaintJet XL300 ..... **$2095**
HP Vectra 386s/20
w/2MB RAM, 80MB HD,
SVGA Monitor **$750**
HP Envelope Feeder for IIIsi **$250**
HP Envelope Feeder for IID **$180**

MISCELLANEOUS

Compaq 386s/20N
w/4MB RAM, 40MB HD,
SVGA Monitor **$800**
Epson EPL8000 Laser Printer **$950**

Call for other demo units in stock. Limited quantities available.

Apple, the Apple logo, AppleCare and Macintosh are registered trademarks of Apple Computer, Inc. Classic is a registered trademark licensed to Apple Computer, Inc. Microsoft is a registered trademark of Microsoft Corporation. ClarisWorks is a trademark of Claris Corporation. GreatWorks is a trademark of Symantec Corporation. Offer valid only in U.S. through authorized Apple Resellers.

NOVELL®
Platinum *Authorized Dealer*

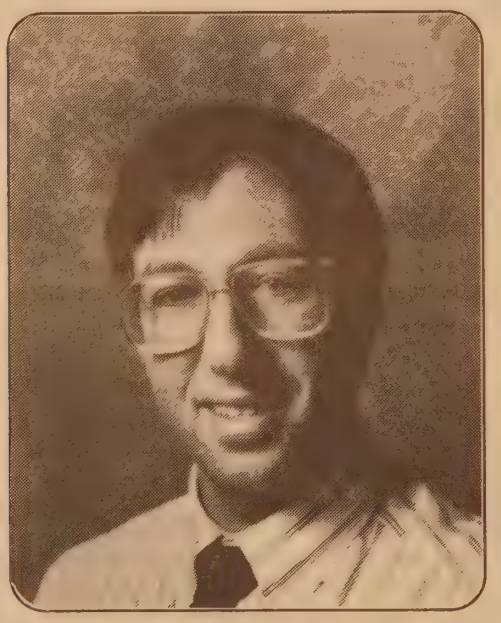
PASADENA	TORRANCE	BREA	COSTA MESA
240 S. Lake Avenue	22533 Hawthorne Blvd.	2860 E. Imperial Highway	3189-A Airway Avenue
(818) 792-1391	(310) 373-0832	(714) 996-0690	(714) 668-9273

Multi Media & beyond

What's New With Photoshop?

The Inside Story From Adobe's Steve Guttman

BY TONY REVEAUX



Copyright © 1993 by Tony Reveaux. All rights reserved.

(Some years back, when Steve Guttman was in graduate school, he was a frequent contributor to this magazine. We had lots of fun interviewing such luminaries as John Warnock and Scott McNealy.

Then Steve went to work for Adobe and immediately became too busy to write for us. From time to time he would drop tantalizing hints about the world-changing product he was working on.

The product was Photoshop.

Steve still doesn't have time to write for us, so we're delighted to welcome him back–this time as an interview subject.

–Mary Eisenhart)

Adobe Photoshop has earned its place as a cornerstone of photo and image editing on the Macintosh environment, and has set standards for image manipulation modules, or filters, which have become interchangeable tools for many graphics and multimedia production programs. When a flagship progam like Photoshop has undergone a complete rewrite and revision, and also comes out with a Windows version with cross-platform compatibility, these developments will affect many other software and hardware products and their users.

To gain some insight into these issues, we spoke with Steve Guttman, senior product marketing manager at Adobe Systems Inc. Guttman, who was the product manager of the original Photoshop, gives overview of the work accomplished by Product Manager/Macintosh Jeff Parker and Product Manager/Windows Bryan Lamkin, and their tireless teams at Adobe.

What major changes will we see in the Mac version of Adobe's Photoshop 2.5?

It's a complete rewrite of the program, designed to accomplish several different things.

We wanted to accommodate features that wouldn't really be permissible under the old architecture, such as being able to view multiple channels as transparent overlays on top of the image. We wanted to make the program inherently faster.

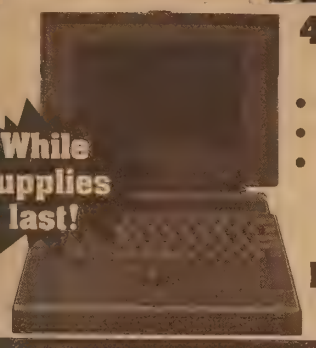
When we first shipped v1.0, who would have thought that people would have been manipulating 50 and 100MB images with the program? The architecture wasn't really optimized for that, so

MACINTOSH BLOWOUT!

We will meet or beat ANY advertised price by any authorized Apple® dealer on any Apple brand product!*

FINANCING AVAILABLE!

Apple® Macintosh® PowerBook™ 170 BLOWOUT!



4MB RAM / 40MB HD with FAX/Data Modem!

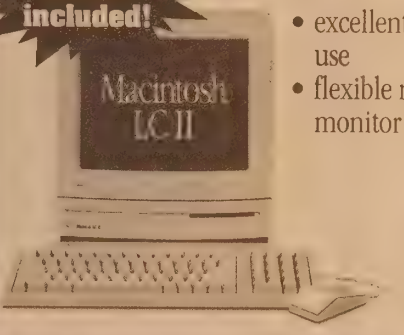
- Macintosh power with notebook convenience
- runs virtually all Macintosh software
- 25MHz 68030 & 68882 with super crisp active matrix display

~~$3899~~

BLOWOUT PRICE! $2299!

Apple Macintosh LC II

KB and Mouse included!



- excellent choice for education or business use
- flexible monitor support built-in monitor not included

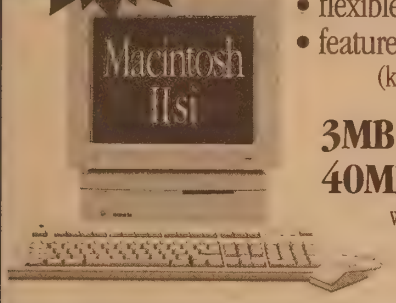
4MB RAM / 40MB HD

$779!

with purchase of Sampo14" Color Monitor.

Apple Macintosh IIsi

GREAT DEAL!



- flexible monitor support built-in
- features 20 MHz 68030 microprocessor

(keyboard and monitor not included)

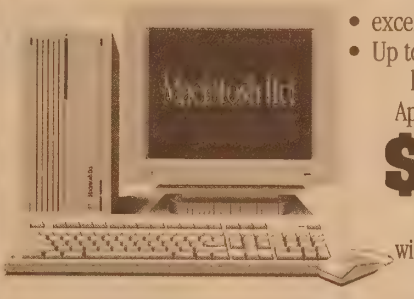
3MB RAM 40MB HD $887!

with purchase of Sampo14" Color Monitor.

5MB RAM 80MB HD $1299!

Apple Macintosh IIci

GREAT DEAL!



- excellent choice for business
- Up to 70% faster than the Macintosh IIsi

keyboard and monitor not included

Apple Macintosh IIci with 5MB RAM

$1689!

with purchase of any color monitor or hard drive

Apple Macintosh IIci with 5MB RAM / 80HD **$1999!**

Apple Macintosh PowerBook 160

- incredibly compact notebook computer
- 16-level gray-scale display
- color video-out capabilities
- built-in support for a variety of monitors
- available with up to 120MB hard drive

4MB RAM / 40 HD $2089

4MB RAM / 80 HD $2399

4MB RAM/120 HD – $2799

Apple Macintosh PowerBook Duo™

PowerBook Duo 230

- performance is comparable to high-end Macintosh II desktop computers
- comes with a 33-megahertz 68030 microprocessor

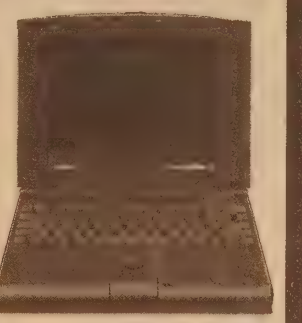
DUO DOCK IN STOCK!

Duo 230 4MB RAM / 80 HD **$2199**

DOCK IN STOCK!

Duo 210 4MB RAM / 80 HD **$1899!**

THIS WEEK ONLY!



*Dealer we beat must have item(s) in stock; does not apply to Powerbook 100. Apple, the Apple logo, LaserWriter and Macintosh are registered trademarks of Apple Computer, Inc. Duo, PowerBook, Quadra and Superdrive are trademarks of Apple Computer, Inc. Prices subject to change without notice. Prices listed are cash only.

Creative™ COMPUTERS

Both locations open Mon-Sat 10-7, Sun 11-6

South Bay – 4453 Redondo Beach Blvd., Lawndale

(310) 542-2292

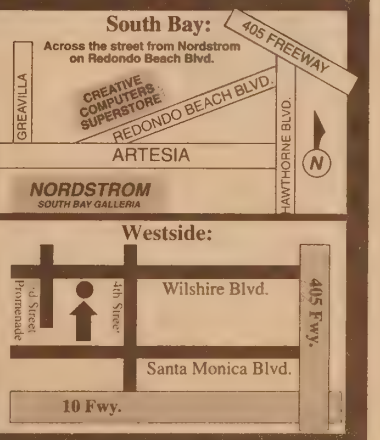
Westside – 318 Wilshire Blvd., Santa Monica

(310) 394-7779

BOTH LOCATIONS OPEN 7 DAYS A WEEK!

Corporate and Aerospace purchase orders accepted. Call our corporate sales office at (310) 542-2292.

Authorized Dealer



3-6 COMPUTERS

2124 CAHUENGA BLVD. HOLLYWOOD, CA 90068

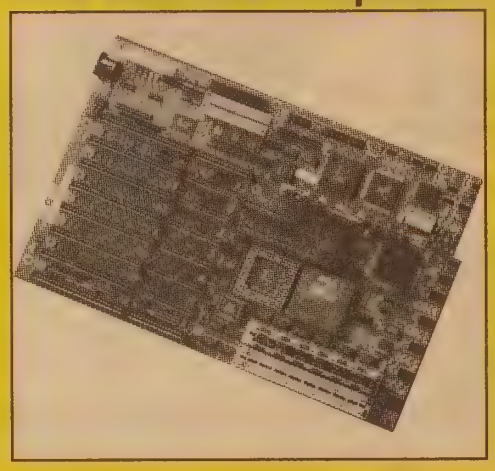
PHONE 213 466-3636

FAX 213 466-3693

MICRONICS

The Ultimate in Speed.

intel inside™



VESA/LOCAL BUS

USA-Built **MICRONICS**
66 Vesa $1099

USA-Built **MICRONICS**
50 DX2 Vesa $869

USA-Built **MICRONICS**
486/33 Vesa $719

USA-Built **MICRONICS**
486/25 Vesa $429

VESA 66

- ★ USA - Built **MICRONICS** 486 Vesa/66MHz
- ★ 213MB Maxtor 7213 Hard drive
- ★ 8MB Simm Memory; 70ns
- ★ 1.2MB & 1.44MB Teac Floppy Drive
- ★ Micronics Vesa 32-Bit Video Adapter/1MB
- ★ Dual Serial/Parallel Adapter
- ★ Northgate Omnikey Ultra Keyboard
- ★ Options: Any Hard Drive; Any Video

$2099

SCSI/LOCAL BUS

- ★ USA-BUILT **MICRONICS** 486 VESA/66MHz
- ★ 8MB SIMM Memory; 70ns
- ★ 1.2GB Fujitsu 2266SA SCSI Harddrive
- ★ 1.2MB & 1.44MB Teac Floppy Drive
- ★ Stealth 24x Vesa Video Adapter/S3
- ★ Mag Innovision #17F SVGA Monitor
- ★ Ultrastar #34F Local Bus SCSI Controller
- ★ Northgate Omnikey Ultra Keyboard/ 127 Keyboard
- ★ One Year Warranty - Parts & Labor
- ★ Authorized **MICRONICS** Distributors Since 1987

$4439

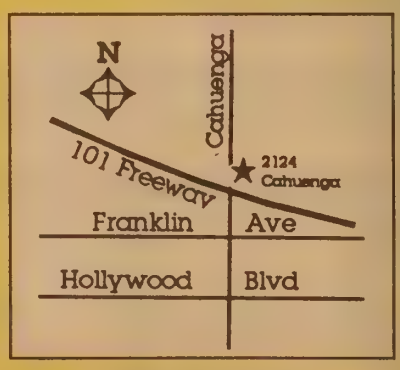
"CALL FOR YOUR SPECIAL CONFIGURATIONS"

One Year Warranty - Parts & Labor

Benefits

The Micronics VL-Bus board allows system manufacturers to create a complete line of affordable high performance plug-and-play 486 products. By providing industry recognized compatibility, these system platforms can be combined with many manufacturers peripherals such as Video, Disk, Network and Multimedia controllers. In addition, with the proliferation of Graphical User Interfaces which require faster Video and Disk performance, these Local Bus products will be the best Windows application solution.

WE STOCK ALL MICRONICS BOARDS, MEMORY & PERIPHERALS...
CALL US FOR BEST PRICING!

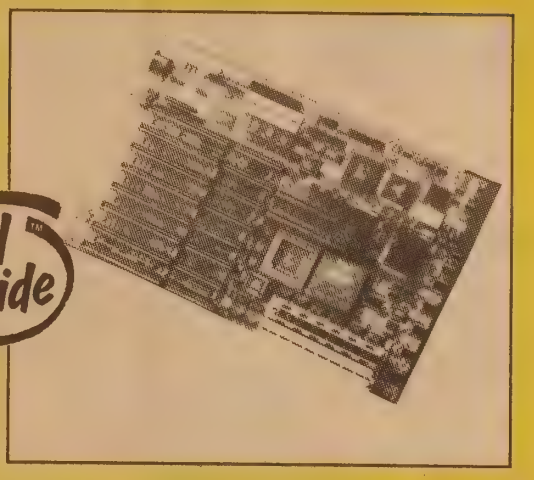


OPEN EVENINGS
7th Year, Member of the Better Business Bureau

*The Intel Logo is a trademark of the Intel Corporation.

VESA

80486 VL-Bus System Board



Features:

MICRONICS VL-Bus = PERFORMANCE GAIN

For peripherals which transfer large quantities of data to and from memory, the Local Bus provides significant performance enhancements. This results from the VL-Bus' direct link between the CPU/Memory and the Local Bus device. The direct link provides an interface which is 32 bit wide and running at the system speed of up to 33MHz rather than the slower I/O speed of 8.3 or 10MHz. The end result of these features is a bus performance increase of 2 to 10 times.

MICRONICS VL-Bus = DESIGN FLEXIBILITY

Micronics 486 VL-Bus board packs a lot of features in it's Baby-AT form factor. Not only does the board offer an on-board local bus IDE interface to control two hard drives, in addition, multi-I/O is also integrated on-board, consisting of 2 serial, 1 parallel and floppy interface. To allow for more expansion, there are 8 16-Bit ISA slots of which 2 are VESA VL-Bus compliant. On top of all these features, Micronics has also provided for future needs by supporting up to 64MB of memory support on-board, an upgrade processor socket and cache memory modules of 64KB or 256KB. So as applications become hungry for more memory or faster processors, the board can easily be upgraded.

Specifications

Processor Support
486SX 20,25
486DX 25,33
486DX2 50,66
Processor enhancement socket for Intel Overdrive processor upgrade

Expansion
6 16-bit ISA slots
2 VL-bus/ISA slots

Memory
4 SIMM sockets for 70 pin 1 Mx36 or 4Mx36 SIMMs
Caching:
8K internal cache
Second level cache support, optional 64K or 256K cache support

Bus Mastering
Supports add-on cards that can assume control of the bus

Multi I/O
2 Serial
1Parallel
Floppy Drive Interface, 2.88 support
Unique IDE local bus design

Software Compatibility
OS/2 NOVELL
UNIX Microsoft Windows
Xenix MS-DOS

Form Factor
Baby-AT mechanical compatibility. All mounting locations available.

ROM Based Setup Features
Select between fast & slow speeds, activation/deactivation of both internal and external cache, and relocation of video and system BIOS to RAM

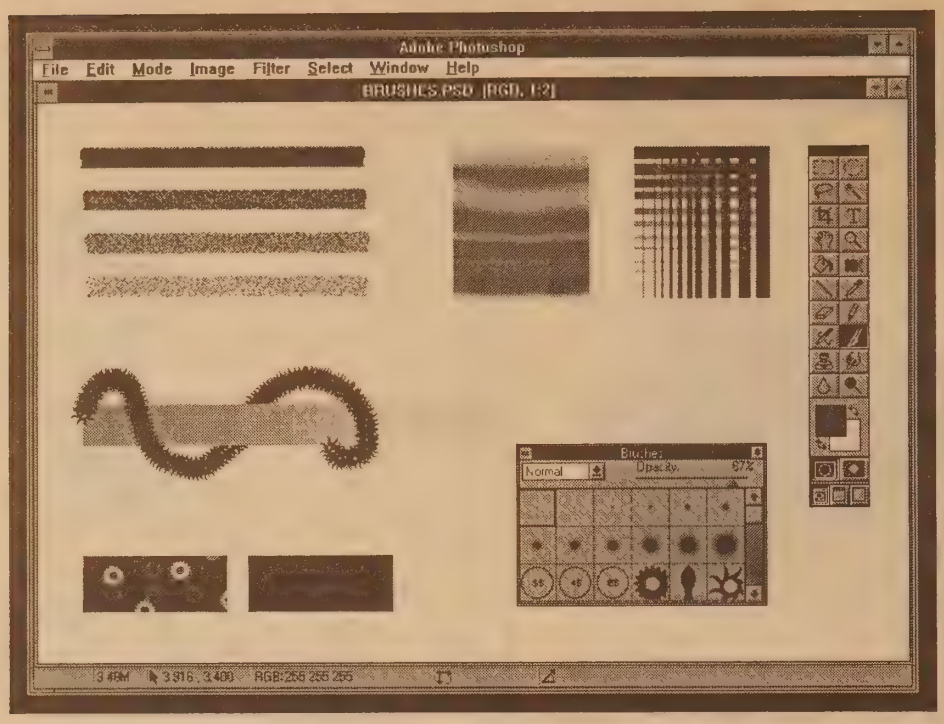
BIOS
Phoenix - with Flash EPROM optional

Testing
48 hour burn-in
Full functional burn-in under DOS, UNIX and OS/2

Documentation
Complete user/installation manual

***The Intel Logo is a trademark of the Intel Corporation.**

3-6 COMPUTERS
2124 CAHUENGA BLVD. HOLLYWOOD, CA 90068
PHONE 213 466-3636
FAX 213 466-3693



we made some changes in the ways that virtual memory and the screen display are handled, which should make it quite a bit faster.

On one hand, it must be very flattering when hardware manufacturers build application-specific Photoshop accelerators, such as SuperMac's ThunderStorm and RasterOp's PhotoPro cards. But aren't they also saying to you that the software is begging for hardware help for things that it should really be able to do itself?

That's another reason we did the rewrite. Another was to have a cross-platform code base, and you can only really get that by design.

One of the things accomplished by this rewrite is to make the program inherently acceleratable. Essentially, we isolated every single routine that did something to pixels, and we put them in a special place in the code and wrote a special interface to those routines. We're working with companies like SuperMac, RasterOps, Radius, DayStar, and others to port these routines to their accelerator cards.

Currently, a card like the ThunderStorm has created additional filters which you access through the filter menu. But once they port these new routines to their cards they will be able to accelerate all the built-in Photoshop functions. They won't just be accelerating filters—ultimately it will be virtually everything.

What are some of the challenges you faced in making a Windows version comparable to the Mac original?

As I understand it, Windows is just a much uglier kind of environment to deal with than the Macintosh, especially in the graphics area.

There are a number of things you can point to—the memory model that Windows uses is not a very good one. For example, whenever you exit a program in the Macintosh, it immediately frees up any memory that is requested by your program. So even if your program doesn't do a good job of disposing of memory as it goes along, the Mac kind of cleans up for you. Windows doesn't do that. Apple just provides so many additional facilities for developers, much more so than Microsoft does.

For example, there still isn't a Windows analog to 32-bit QuickDraw on the Macintosh—something that will render images from 1-bit to 24-bit accurately at a bit-depth of whatever monitor and video card you're using for display—even though Windows is three years old, I guess, by now.

There are all kinds of issues like that. I think in general the Mac is a more robust, more fully featured program environment. I do think that the programming tools under Windows seem to be pretty good. There are more options under Windows, and the debuggers seem to be pretty good, and a lot of additional utilities are available.

Which features were the most difficult to include in the Windows package?

It wasn't really a matter of which features were hard; it was getting the architecture right, such that features were easy to port over to the Windows version.

We have sort of a cross-platform core code base now which ports real easily. The interface code for each platform is done independently. We've been pretty smart about drawing the line between what's done in a Windows-specific way and what's done in a cross-platform sort of way. That's the real key to a successful cross-platform strategy.

So in a shop where Photoshop is being used on both platforms, workers can exchange their files easily?

Yes, absolutely. That was really the goal, because we know that corporations in particular are multiplatform. Pre-press shops, for example, are used to getting files from both Macs and PCs. Although they have been predominantly Mac in the past few years, the PC is really becoming more popular, such as for output graphics.

Which existing photo-retouching programs for the PC will be the main competition for Windows Photoshop?

Certainly Aldus's PhotoStyler and Micrografx's PicturePublisher are the main programs that people are buying right now. You look at those programs, and in general, if you're working with large images, they are quite a bit slower than Mac Photoshop. So Windows kind of got a bad rap for image processing from the word go. But in fact the Windows version of Photoshop is as fast or faster than the Mac version, when high-end Intel processors are being used. It's pretty cool!

What about color management? Does Photoshop 2.5 for the Mac leverage off of Apple's ColorSync system extension?

Yes, it supports ColorSync. Photoshop itself sort of has its own color management system with RGB and CMYK modes, and printing preferences that you calibrate to for the monitors and color output devices. The way we work with ColorSync is to pull color information out of ColorSync that allows that information to work within the Photoshop management models. I think it is implemented fairly elegantly.

How far is Adobe going to fulfill the goal of a complete graphics creation environment in Photoshop?

You still can't do things like add PostScript text; it's still rasterized, as it was in the earlier version.

However, we have a much more robust implementation of the pen tool, which can be used for making very precise selections. It used to be implemented in a very modal sort of way; now it's completely nonmodal. You can do things like upstroke paths with many of the painting tools. You can hide paths and show them very easily. Once you have rendered into the bit-map environment, of course, it's still rendered in there.

We're looking, in the future, to have capabilities such as adding PostScript more seamlessly, and to make it easier to manipulate

DESKTOP VIDEO CAD/GRAPHICS

TRUEVISION

Targa +16	$1436
Targa +16/32	1596
Targa +64	1996
Targa 1024/32	1836
TV Bravado	971
Video VGA 16	956
AT Vista 2Mb	2696
Truevision Tips	636
TV Videomaker	279

DIAQUEST ANIMATION CONTROLLER

MICRONICS

486 ISA & EISA SYSTEMS

• If you are setting up a CAD/Graphics/ Animation System, let us give you a competitive bid and give you the support and service you need.

AUTODESK 3D STUDIO 2.0

Professional Animation System

Including : CD ROM w/650MB of 3D Models & Animations (List price $2995)

★ FREE 1 WEEK ★ TEST DRIVE CALL FOR DETAILS!

Special Lease
36 Month
$1 Buy Out
Bundle
$139 Per Mo.

BUNDLE
Targa +16/32
3D Studio 2.0
TempraPro
(List $5800)
$3880

Ask for Anthony

MICROTEK IIxe 1200dpi COLOR SCANNER

Includes FREE Aldus Photostyler 1.1

In Stock **$1199**

QMS 860

600 DPI QMS PRINT SYSTEM

$4145

GRAPHIC BOARDS

Genoa 24 bit 7900	$224
Diamond 24 bit 24x	185
Hercules G/Station	Call
Graphic Station +2	Call
#9 GX1 Lev 29 (Windows 1280 x 1024 65K)	1836
#9 GX1 Lev 21	783
VMI Designmaster (Our Favorite Autocad Board)	425

NTSC VIDEO

Magni VGA Producer	$1295
Visionetics VIGAVGA	399
Visionetics WINDOW (Best Captive/Live Video)	399
Ventek Chromagold	349

20" MONITOR BLOWOUT

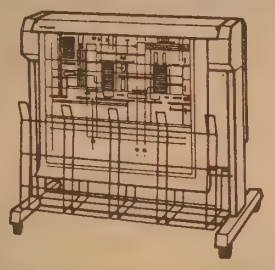
SuperScan+	$1440
SuperScan Pro	1890
20" Presenta (Call for Fax Spec Sheet)	999

SOFTWARE

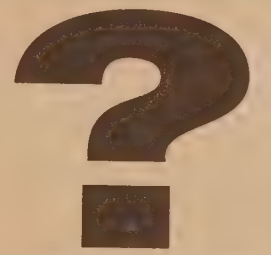
Animator Pro	$636
Aldus Photostyler	636
Fractal Design painter	379
Targa + Tips	636
Human CAD	399
Corel Draw	379
HSC Interactive	395
HSC Quickshow	119
Tempra Pro/Show	396
Renderise (Windows & 3D Rendering)	796
CD ROM Models (4000 3D Models)	445

NTSC VIDEO MONITORS

Sony GVM 1310	$996
Sony GVM 2020	1296
PVM 1341 450L	785
PVM 1342 600L	980
Mitsubishi	Call
Nanao	Call
IDEK	Call
Hitachi 20" Superscan	1490
Taxan (1600 x 1200) 20"	Call
Sony 1604 16"	1075



VS ?



CalComp DRAWINGMASTER™ — HP DesignJet

JUDGEMENT DAY!

Come in and see both of these plotters and judge for yourself, and RECEIVE FREE a Casio Electronic Organizer!!!

***Ask about your CalComp $500 Rebate Coupon!**

PLOTTERS

AUTHORIZED

CALCOMP
*Drawing Master (Thermal Plotter)
*Pacesetter 2036 (8 Pen Plotter)

HOUSTON INSTRUMENTS
*DMP161-8 Pen HEWLETT PACKARD
*DesingJet (InkJet A-E)

ENCAD
*SP1800
*NovaJet (Color InkJet)

VERSATEC
*CadMate (Electrostatic)

CalComp NEW 3024 **$1992** A-D, 8-Pen

DIGITIZERS

Summa 12x12	$299
Calcomp 12x12	299
Kurta 12x12	375

12 x 17 DigiTizers with FREE Autocad Templat= **$319**

*AVAILABLE FOR DEMONSTRATION

AUTODESK TRAINING

AUTOCAD

AUTOCAD 1 & 2
16 Hour Certificate Courses
Convenient Weekend Schedules
Call for more information

3D STUDIO

USER GROUP MEETING!

Last Thursday of Each Month
Call for more information!

February 20, 1993

We have some great deals on CAD equipment this month including a $500 rebate on all CalComp DrawingMaster plotters plus a FREE CASIO ORGANIZER for just coming in for a demonstration! This special is for CAD users only.

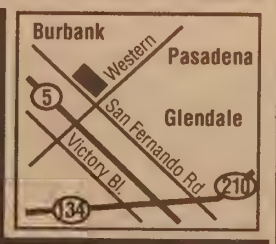
*Also, we will have our second 3D STUDIO User Group Meeting on March 25. We will have a simple *!*!?* session and look at other third party products. Please call for more information.*

Good Luck,
Milton Fleitas

DESIGN SYSTEMS INFINITY DESIGN SYSTEMS INFINITY

INFINITY DESIGN SYSTEMS

6624-A San Fernando Rd.
Glendale, CA 91201



(818) 240-2011

Fax (818) 240-2015 • Service (818) 240-2944

DATA CARTRIDGES

DC2000 Data Cartridge (40MB)	$14.00
DC2120 Data Cartridge (120MB)	$18.50
DC2060 Formatted (DJ-10)	$25.13
DC2120 Formatted (DJ-20)	$25.13

MEMORY

41256-80 256K x 1 80 NS RAM Chips (ea)	$1.85
44256-80 256K x 4 80 NS RAM Chips (ea)	$4.50
1024-80 1024 x 1 80 NS RAM Chips (ea)	$4.50
4464-80 64 x 4 80 NS RAM Chips (ea)	$1.10
256K 80 NS SIMM Modules (1MB = 4 Pcs)	$40.00
256K 80 NS SIPP Modules (1MB = 4 Pcs)	$41.00
1MB x 3- 70 NS SIPP Modules	$36.00
4MB 60 NS SIMM Module	$129.00

KEYBOARDS

BTC Enhanced 101 Key	$25.00
Focus FK-2001	$40.00
Focus FK-9000	$69.00
Keytronics 101 Enhanced	$42.00
Honeywell 101 Keyboard	$35.00

MATH CO-PROCESSORS

IIT 287-20	$65.00
CYRIX 80387SX-25	$72.00
CYRIX 80387-40	$87.50

CONTROLLER CARDS

IDE 2 Hard/2 Floppy	$13.00
IDE 2H/2F/2Ser/1 Par/1 Game	$18.00
I/O Card 2 Ser/1 Par/1 Game	$12.00

TAPE BACK-UPS

Colorado 120 MB (DJ-10)	$187.00
Colorado 250 MB (DJ-20)	$245.00
FC-10	$79.00
AB-11 Controller	$39.00
KE-09 External Kit	$74.00

VIDEO CARDS

Monochrome Graphics Card	$12.00
Color Graphics Card	$18.00
16-bit VGA Card (256K) on board	$29.00
16-bit VGA Card (512K) on board	$39.00
16-bit VGA Card (1 MB) on board	$60.00
Diamond Stealth 24	$185.00
Diamond Stealth (1 MB)	$219.00

CD ROMS

Pro Audio Fusion CD Kit	$475.00
Sound Blaster CD ROM	$377.00
Sound Blaster Multi-Media Upgrade Kit	$529.00
Mitsumi CD-350ms	$265.00

HARD DRIVES

Western Digital 60MB	$160.00
Western Digital 80MB	$200.00
Western Digital 213MB	$380.00
Maxtor 130MB	$260.00
Maxtor 245MB	$400.00
Quantum 127MB	$270.00
Quantum 170MB	$310.00
Quantum 240MB	$479.00

FLOPPY DRIVES

Teac 1.2 MB 5.25"	$54.00
Teac 1.44 MB 3.5"	$49.00

SOUND CARDS

Soundblaster Pro	$179.00
Soundblaster Basic	$149.00
Soundblaster	$89.00
Soundblaster 16	$229.00
Pro Audio Spectrum 16	$190.00

MONITORS

14" Amber Mono (720 x 350)	$85.00
14" Paper White Mono (720 x 350)	$85.00
14" Paper White VGA	$107.00
14" VGA (1024 x 768 .39mm DP)	$208.00
CTX 5468 14" Super VGA Color Monitor (1024 x 768/.28mm Dot Pitch) 2 Yr Warranty	$250.00
CTX 5468NI 14" Super VGA Color Monitor (Non-Interlaced) (1024 x 768/.28mm Dot Pitch) 2 Yr Warranty	$290.00

CASES

AT Jr for an XT with a 150 Watt PS	$48.00
Baby AT Case with a 200 Watt PS	$57.00
Mini Tower Case with a 200 Watt PS	$57.00
Mid Size Tower Case with a 230 Watt PS	$80.00
Full Size Tower Case with a 230 Watt PS	$95.00

SOUND CARD SPEAKERS

Labtec SS100	$19.95
Labtec Shielded CS150	$21.95
Labtec SS200	$24.95
Labtec Shielded CS550	$28.00
Labtec Shielded SS700 w/Equalizer	$35.00

MOTHERBOARDS (all boards include CPU, BIOS & manuals)

286-20 (SIMM Board)	$65.00
386SX-25 (Exp. To 16MB)	$100.00
386SX-33 (Exp. To 16MB)	$109.00
386SX-40 (Exp. To 16MB)	$119.00
386DX-40 w/64K Cache Exp. To 32K	$180.00
386DX-40 w/256K Cache Exp. To 32K	$200.00
486DX-33 w/256K Cache Exp. To 32K (Intel)	$460.00
486DX-33 w/256K Cache Exp. To 32K (Cyrix)	$370.00
486DX-50 w/256K Cache Exp. To 32K (Intel)	$660.00

MICROSOFT DOS 5.0 $39.00

1MB 70NS SIMM MODULE $31.00

386SX-25 SYSTEM

Both Floppy Drives

- Mini Tower Case or Desktop Case
- 2 MB RAM Installed
- Teac 1.2 & 1.44 MB Floppy Drives
- 2 Hard/2 Floppy Drive Controller
- 80387 Math Co-Processor Socket
- 1 MB Trident VGA Video Card
- 1024x768 Super VGA Monitor
- Real Time Clock Calendar
- 2 Serial ports, 1 Parallel, 1 Game Port
- 101 Enhanced Keyboard

$600.00

386-40 SYSTEM

Both Floppy Drives & 4MB

- Mini Tower Case or Desktop Case
- 4 MB RAM Installed
- 64K Cache Installed exp. to 256K
- Teac 1.2 & 1.44 MB Floppy Drives
- 2 Hard/2 Floppy Drive Controller
- 80387 Math Co-Processor Socket
- Western Digital 60MB H.D.
- 1 MB Trident VGA Video Card
- 1024x768 Super VGA Monitor (.28)
- Real Time Clock Calendar
- 2 Serial ports, 1 Parallel, 1 Game Port
- 101 Enhanced Keyboard

$925.00

486-33 SYSTEM

256K Cache & Both Floppy Drives

- Mini Tower Case or Desktop Case
- 4 MB RAM Installed
- Teac 1.2 & 1.44 MB Floppy Drives
- 2 Hard/2 Floppy 1:1 IDE Controller
- Western Digital 60MB H.D.
- Wietek Co-Processor Socket
- 1 MB Trident VGA Video Card
- 1024x768 Super VGA Monitor (.28)
- Real Time Clock Calendar
- 2 Serial ports, 1 Parallel, 1 Game Port
- 101 Enhanced Keyboard

$1225.00

2400 Modem w/Send FAX $40 9600 Send/Rec FAX $60

FINANCIAL • SOUNDBLASTER • UTILITIES • OVER 3500 DIFFERENT TITLES

SHAREWARE SOFTWARE

$1.50 per disk • 10 or more just $1.00 each!

BUSINESS • ENTERTAINMENT • GRAPHICS • GAMES • COME SEE OUR LIBRARY

****ALL SYSTEMS COME WITH A 2 YEAR LABOR/1 YEAR PARTS WARRANTY****

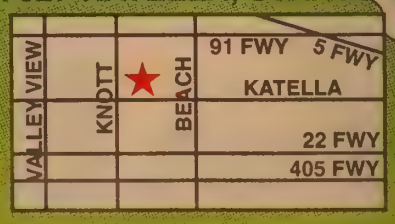
COMPUTER SUPPLY CLUB

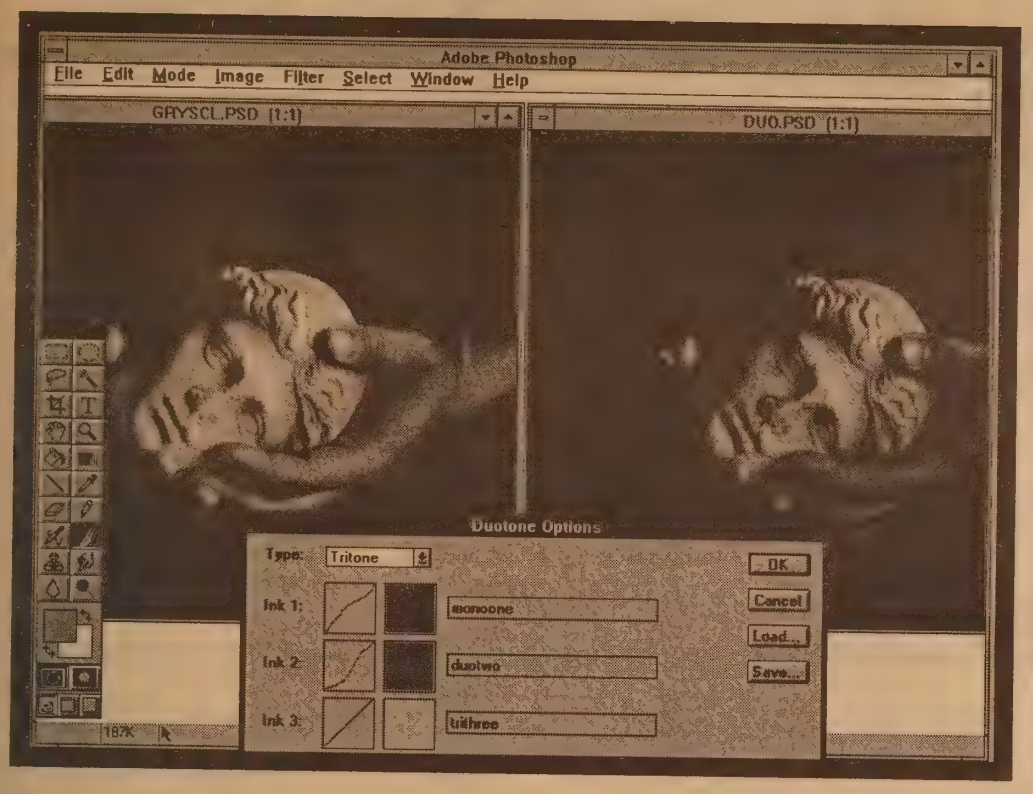
(714) 821-1210

HOURS: Monday-Friday: 10-7, Saturday: 10-6

TERMS: We accept VISA, Master Card and Discover. No personal checks over $200.00. Availability and Prices subject to change without notice.

7027 KATELLA, STANTON





bit-map images.

Can we look forward to being able to do some PostScript drawing in Photoshop, as with the basic levels of Adobe Illustrator?

I wouldn't like to say or foreshadow any futures of the software, because we haven't decided those kind of things, but that's certainly a request, and we're looking carefully at things such as that.

What were some of the major improvements Photoshop users asked for?

One of the things that we added, sort of in acquiescence to the photographers who are increasingly getting into electronic image manipulation, is a dodge and burn tool. It simulates the darkroom technique of selectively lightening and darkening portions of an image.

Also, as I've mentioned, being able to view alpha channels as transparent overlays on top of an image. So you can do things like actually paint a mask. You can use any number of channels, up to a total of sixteen, memory allowing.

There's hundreds of small improvements, things that make it easier to work with the program. Another one is an adjustment command that we call Variations, which gives you a visual thumbnail of the selected areas that you can modify; arranged around it are thumbnails of the different versions of the image that can be selected. The variations in tone are arranged like hues around a hue wheel, and you have a column which is variations in lightness. It makes sense for visual editing.

Are there changes and additions in the Photoshop Filters?

We've added a few filters of our own. There's color halftone and extrude, which are both sort of interesting stylizations, and of course you've seen Kai's Power Tools, which are very cool.

How much speed increase will the average user discover with Photoshop 2.5 over the earlier version?

It's very much feature-dependent and implementation-dependent; the filters aren't especially faster than 2.0, but the painting itself is about twice as fast for an in-memory image and the screen redraw is maybe 1 1/2 times as fast.

The virtual memory scheme now uses tiles instead of bands. The band is basically the width of the screen times some fixed height. If you were working on a high-resolution image, and you were zoomed in, you had to bring into memory many bands, much more of the image than may have been visible. Now you only need to bring in the little blocks that actually cover the area you're working in, meaning that it will redraw faster.

What are some of the Photoshop 2.5 enhancements that Mac-based multimedia producers can look forward to?

One of the things that we have done is to build some synergies with Adobe Premiere. For example, v2.0 of Premiere supports what we call film strip files, so that you can save a QuickTime movie as a bunch of frames and open it up in Photoshop and do rotoscoping; we've added some features to Photoshop 2.5 that will make that a little bit easier. You can make a selection, and then, with the arrow keys, nudge it down a frame at a time, and that makes rotoscoping easier and more seamless. We make it easier to save a palette of colors and load it into the color palette, so if you're working in an 8-bit mode, you can save the color table and actually load that into a palette.

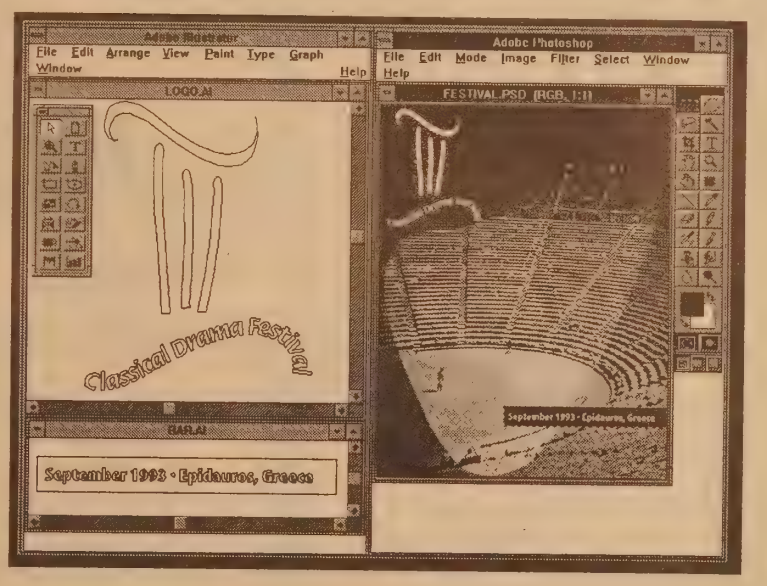
That can be useful in MacroMind Director.

Right, exactly.

What will the list price be for Photoshop 2.5?

It will be the same as for 2.0, $895, and we have two upgrades. One is the regular upgrade which is new manuals, completely rewritten tutorials, new diskettes, etc.; that's $129.

Then we have what we call the CD-ROM Upgrade for $199. That has all the other stuff, plus it has a multimedia front end that gives you access to the complete library of tech notes from our tech support department on Photoshop. We have fifteen QuickTime MooVs of new features and tips and techniques on Photoshop; we have over fifty pieces of high-resolution stock photography which users have almost unlimited license



to use and experiment with, and five of Kai's filters. We have a digital photography show that we helped sponsor that took place in San Francisco last summer; it's about 150 images of totally inspirational work that was created by about twenty artists around the world using Photoshop.

Have you seen more use of Photoshop installed with CD-ROM?

Yeah, I think its finally becoming the year of the CD-ROM! I think they are really starting to proliferate. ■

RESOURCES:

Adobe Photoshop 2.5
Adobe Systems Inc.
1585 Charleston Rd.
P.O. Box 7900
Mountain View, CA
94039-7900
(415)961-4400

CITIZEN Tandon AST EPSON intel EVEREX

YOUR FINAL SOURCE FOR

★ NOTEBOOK BLOWOUT! ★

TOSHIBA

- **T2200SX 80** $1869
  2MB, 1.44 386SX-20, 5.5 lbs.
- **T3300SL 80/120** 1869/2099
  2MB, 1.44 386SL-25, 5.9 lbs.
- **T4400SX 80/120** 2199/2345
  2MB. 1.44 486SX-25, LCD Screen
- **T4400C 120HDD** ..... CALL
  486SX-25, 4MB, Active Matrix 9.5
- **T4400C 200HDD** ..... CALL
  486DX-25, 4MB, Active Matrix 9.5
- **T4500 80/120** 2399/CALL
  486SX-20, 4MB, LCD, WIN 3.1

TOSHIBA Satellite 1850C Color

Features Include a 9.5" Color LCD screen, 386SX-25MHz CPU, and Toshiba DOS 5.0! Includes Windows and Mouse!

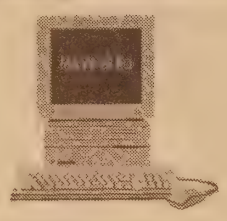
80MB $2299
120MB $2479

T1850
T1800

The 1850 includes a 25MHz CPU and 4MB of RAM
The 1800 includes a 20MHz CPU and 2MB of RAM
Both have a 4 hour battery life and a VGA screen!

1850 120MB $1859
1800 60MB $1299

- **DYNAPAD T100X 40HDD** ..... NEW
  386SXLV-25, Pen Point Ready
- **T4500C 80/120** ..... CALL
  486SX-20, 4MB, Active Matrix Window
- **T6400DX 200HDD** $4099
  486DX-33, 4MB, Gas Plasma 11.7 lbs.
- **T6400SX/120** 3359
  486SX-25, 4MB, Gas Plasma 11.7 lbs.
- **T6400SXC/120** 5459
  486SX-25, 4MB, Active Matrix
- **T6400DXC 200HDD** 6249
  486DX-33, 4MB, Active Matrix
- **T6400 MM 200 Multimedia** ..... CALL
  486DX33, Active Multimedia



PBK180 4-80 ..... $3799
PBK160 4-80 ..... $2559
PBK 170 4-80 ..... $2749
MACIIVX/CDROM $2579
Quadra 700 ..... $3099

Classic II	LC II	QUADRA 700	II CI
4MB RAM 80HD	4MB RAM 80HD	4MB RAM 200HD	8MB RAM 200HD
$1129	$1149	$3599	$2699

TEXAS INSTRUMENTS

TM 3000 WIN SX
4MB 60/80
$1645 / $1795

TM 3000 WIN SX
4MB 60/80
$2845

AST

POWER EXEC.
386SL25 SX20

4MB/60MB $2190
4MB/120MB $2510

AST

Premium Exec
386 SX/20 Notebook

w/20MB HD $925
w/40 MB HD $1025
w/60MB HD $1150

LIBREX

386SX; 20MHz
4MB Memory

20MB $895
40MB 1025
60MB 1120

ZENITH

MASTER SPORT
386SL20, 60MB. . . $1195
MASTER SPORT
386SX20, 60MB . . . $1145

AT 286 12MHZ BAREBONES

- MINI TOWER CASE
- 12MHz MOTHERBOARD
- 1.2 OR 1.4 MB FLOPPY DRIVE
- HARD & FLOPPY CONTROLLER IDE
- 101 KEY KEYBOARD
- CLOCK/CALENDAR
- 2 SERIAL PORTS/ 1 PRINTER PORT/GAME

$225

386DX 40MHZ W/64K CACHE BAREBONES

- MINI TOWER CASE
- 40 MHz 386 MB W/64K CACHE
- 1.2 OR 1.4 MB FLOPPY DRIVE
- HARD & FLOPPY CONTROLLER IDE
- 101 KEY KEYBOARD
- CLOCK/CALENDAR
- 200 WATT POWER SUPPLY
- 2 SERIAL PORTS/ 1 PRINTER PORT/GAME

$340

486DX 33MHZ W/256K CACHE BAREBONES

- MINI TOWER CASE
- 33 MHz 486 MB W/256K CACHE
- 1.2 OR 1.4MB FLOPPY DRIVE
- HARD & FLOPPY CONTROLLER IDE
- 101 KEY KEYBOARD
- CLOCK/CALENDAR
- 200 W POWER SUPPLY
- 2 SERIAL PORTS/ 1 PRINTER PORT/GAME

$595

386SX/40MHz BAREBONES

- MINI TOWER CASE
- 40 MHz 386SX MB
- 1.2 OR 1.4 MB FLOPPY DRIVE
- HARD & FLOPPY CONTROLLER IDE
- 101 KEY KEYBOARD
- CLOCK/CALENDAR
- 2 SERIAL PORTS/ 1 PRINTER PORT/GAME

$265

COMPUTER BUSINESS CENTER

MON.-FRI.
8:30-6:00
SAT:10-4

We Will Try to Beat Any Advertised Price

Seagate NEC COMPAQ HEWLETT PACKARD IBM TOSHIBA

COMPUTER SOLUTIONS

CAF TECHNOLOGY 386-40 MHz

FCC CLASS B & NOVELL APPROVED
- 80386-40MHz 64k Cache Motherboard
- 4MB RAM Expandable to 32MB
- Mini Tower Case/Power Supply
- IDE (Hard/Floppy) Control
- TEAC 1.2 MB Floppy Drive
- TEAC 1.44 MB Floppy Drive
- 80MB Hard Disk
- Serial/Parallel/Game Card
- Super VGA 1024x768 Monitor & 1MB Card
- 101 Keyboard

$1095

CAF TECHNOLOGY 486-33 MHz

FCC CLASS B & NOVELL APPROVED
- 80486-33MHZ 64K Cache Motherboard
- 4MB RAM Expandable to 32MB
- Desk Top
- IDE (Hard/Floppy) Control
- TEAC 1.2MB Floppy Drive
- TEAC 1.44MB Floppy Drive
- 120MB Hard Disk
- Serial/Parallel/Game Card
- Super VGA 1024x768 Monitor & 1MB Card
- 101 Keyboard

$1450

HEWLETT PACKARD

LaserJet 4, Toner	$1369
IIP w/Toner	795
IIIP /Toner	950
IIID w/Toner	2295
DeskJet 500 w/Cable	399
ScanJet IIC	1385
Paintjet XL	1650
PaintJet	695

Memory Upgrades III & IIP

1 Mg	$80	2 Mg	$140
3 Mg	190	4 Mg	250

HP PostScript Card 489

For Laser II & IID

2 Mg	$129	4 Mg	250

MONITOR/ VIDEO CARD

Sony 1304 w/Cable	$585
Sony 1302 900x560 .25	549
Sony 1320 720x480 .25	439
Goldstar 1024x768	329
Goldstar 800x600	309
VGA Card 800x600 Oak	49
VGA Card 1024x768 256K	75
Paradise Original 1024 Card	159

NEC

NEC 3FGX	$635
NEC 4FG	749
NEC 5FG	1275
NEC 6FG	2295

EPSON AUTHORIZED DEALER

LX810	$179
FX850	299
LQ860	595
FX1050	435
LQ2550	895
DFX5000	1350
DFX8000	2250
LQ570	279
LQ870	450
LQ1170	599
LQ1070	379
ActionWriterII	699
EPL 8000	1325

CITIZEN

Authorized Sales/Service

GSX 140+ New Faster	$309
GSX 130	275
GSX 145, 132 COL	409
200 GX, 9 Pin	169
Color Option	49/69

CANON Bubble Jet

BJ-10EX Printer	$309
BJ-300 80 col. 600 cps	469
BJ-330 132 col. 600cps	619
BJ-200 360dpi	359
BJC-800/820 Color	1889/1995

OKIDATA PRINTERS

Authorized Dealer

ML184 Turbo	295
ML321	460
ML390+	460
ML320	340
ML391+	625
ML380	225
ML393+	975
ML393+Color	1095
OL400	599
OL810	1025
OL830	1195

COLORADO MEMORY SYSTEMS INC.

120MB Low Cost Backup
- Fast-4MB in Under 1-1/2 Min
- QIC-40 Interchange Standard
- Floppy Interface
- PC, XT, AT and PS/2
- Novell, 3COM and Xenix

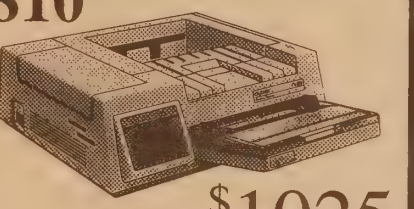
Internal unit w/tape	$195
External unit w/tape	325
For 250 MB, add	50

LIMITED QUANTITY

TAX FONT HP LASER FAMILY	**$69**
AUTO CAD RELEASE 12	**$2450**
HP LASER III, IIP, IIID Postscript Cartridge	**$295**
NEC 2A MTR	290
LOGIC TECH MOUSE	26
HP PAINT JET SERIAL VER.	550
POCKET SIZE MODEM, 1200 BAUD	20
VGA CARD VIDEO 7 (640X480,256)	31
SEND/RECEIVE FAX MODEM (9600SR; 2400MODEM)	79

OL-810

- 8PPM Printing Speed
- HP LaserJet Series III, OL400, IBM ProPrinter IIISL
- OKI SMOOTHING TECHNOLOGY
- 300x300 DPI resolution
- 13 HP III compatible, scalable fonts
- 200 sheet letter size paper input tray with adjustable manual feed
- 1MB Ram standard; expandable to 5MB
- Full library of HP Compatible scalable font cards
- 5 year LED head warranty, 1 year parts and labor
- Up to 16,000 pages per month rated duty cycle



$1025 w/Toner

INTEL MATCO PROCESSORS

80387/33/25	$149
80387/20/16	149
80287/10/8	99
80C287-A	89

MODEM

IBM Internal, 2400 Baud	$50
IBM External 2400 Baud	90
MAC External	150

• SANTA MONICA •
(310) 452-2027 • FAX (310) 452-5548

• SIMI VALLEY •
(805) 584-8307 • FAX (805) 584-8379

Clip Media, Copyright, And Consumers

CD-ROM Creates Market Opportunities For Mass Consumption Of Digital Clip Media, But Mass Markets Require Massive Adjustments

BY MATTHEW LEEDS

The acceptance of CD-ROM technology by the home and small business market has triggered an explosion in digital clip media.

CD-ROM provides the low cost of duplication and high storage capacity needed for mass-market digital clip media. This low cost of entry has allowed individuals and companies that earlier sold data through specialized channels (stock photo houses, needle drop music vendors, etc.) to attempt to move their goods directly into the hands of consumers. This however, raises some difficult questions.

NEW SOLUTIONS, NEW PROBLEMS

Specialized-channels customers were sophisticated buyers who understood pricing, quality, and copyright restrictions. Prices of several hundred to several thousand dollars for a single image or sound track were normal; quality was generally very high; and copyright restrictions were well understood and negotiated for specific usage.

The consumer market expects to pay less than a dollar per image or audio track, often has no idea how to tell the difference between great and only so-so quality, and has little or no understanding of copyright restrictions and copyright law.

This has resulted in a tremendous variety of experiments in new products for consumers. Traditional media providers are attempting to sell the same products they sell to the high end, while pricing for the consumer market. To justify the price difference, they adjust the quality and/or rights provided. Other providers, with no high-end market to protect, are much more generous with both the quality they provide and the rights they license. It is worth noting that some low-cost products are also low-quality. With so many new providers flooding the market, it's tough to sort out what's worthwhile and what isn't.

Quality is based on a few factors: the quality of the process used to digitize the original media, the size of the sampled data file, and the quality of the original media. A 35mm slide digitized with a cheap scanner (or a poorly adjusted one) will have a reduced color fidelity and dynamic range. An out-of-focus or poorly exposed original will never provide a quality digital file. The same applies to audio and video data.

Assigned rights range all over the place. Some providers allow any usage; some require you to credit the original artist and/or provider; some allow non-commercial usage only (a vague limitation in some cases); some limit usage to non-broadcast, or, in print media, to a specific print run size.

While getting clip media in digital form alleviates the need to own digitizing hardware, the ease with which you can locate a specific file on a CD depends on the interface provided with the clips. Some companies have made the investment in programming a decent, sometimes excellent interface. Others offer only a printed listing of the contents.

CLIP MEDIA SAMPLER

I collected a representative sampling of current digital clip media products and spent some time exploring their interfaces (or lack thereof), checking out their quality, and reading up on their license restrictions. The results are laid out below, both in the table provided and summarized in text. Recent developments in QuickTime will improve the QuickTime clips, and it's possible that announced low-cost 16-bit audio hardware for the Mac will also improve audio samples.

•**Mr. Sound Effects** comes on four floppy disks. It has no interface for easily playing each sound, but it includes a custom version of Sound Master, an INIT that lets you assign sound effects to system events. (For example, you can assign a toilet flush sound to a disk eject—something that gets old fast.) The sound samples are in SoundEdit format, and no conversion utility to SND or AIFF is provided, nor is a standalone sound player utility. All samples are 8-bit.

•**Music Bytes** comes with an excellent interface, Media Librarian. Media Librarian locates and plays samples, provides information about each, and lets you save samples to your hard drive. Samples are provided in 8-bit AIFF, MIDI, and CD Audio formats. There are 27 instrumental tunes in 60-, 30-, 15-, and 5-second versions, and 107 sound effects.

•**WraptureReels One** uses the same high-quality interface that premiered with the Wraptures One still-image CD. The QuickTime movies on this CD are 32-bit, full screen, 30-frame/sec, and most loop seamlessly. They also come in a smaller version for previewing. They are designed for output to video (frame by frame), use as texture maps in full-screen renderings, or as animated backgrounds. Some include static or animated masks. Also included are sound effects and still backgrounds. A basic QuickTime movie player/editor is included as is a QuickTime to PICT converter.

•**MediaClips** is a collection of stills, QuickTime movies, and audio and sound effects. It comes with a good, useful interface; the clips are generally of good quality (sometimes excellent—I use

The consumer market expects to pay less than a dollar per image or audio track, often has no idea how to tell the difference between great and only so-so quality, and has little or no understanding of copyright restrictions and copyright law.

RESOURCES:

Mr. Sound Effects &
Music Bytes
Prosonus
11126 Weddington
North Hollywood, CA
91601
1-800-999-6191

WraptureReels One
Available from Educorp

MediaClips
Aris Entertainment
12162 SW Scholls
Ferry Rd., Ste. 107
Portland, OR 97223
(503)520-1234

Nautilus
7001 Discovery Blvd.
Dublin, OH 43017
(614)766-3150

Copyright © 1993 by Matthew Leeds. All rights reserved.

Quantum Leap Performance.

THUNDEROUS SPEED WITH THE NEW GENERATION S3-805 GRAPHICS ACCELERATOR

EISA WIN-Station (VL-Bus)

- 64K Cache SRAM & Expandable to 256K
- 4 MB RAM & Built-in 487 Math Coprocessor
- 1.2 MB 5.25" & 1.44 MB 3.5" Floppy Drives
- 170 MB 15ms IDE 64K Cache Drive

32-Bit EISA Hard Disk Controller (4X faster DTR)
-Bit **VL-Bus WinMax S3-805** Graphics Accelerator
w. 1MB RAM (Up to 1280x1024 & 16.7M Colors)

- 14" Non-interlaced .28mm Super VGA Monitor

(Bigger edge to edge 72Hz flicker-free display)

- 2 Serial, 1 Parallel & 1 Game Ports
- Enhanced 101-key Keyboard
- Hi-Resolution 400DPI Serial Mouse

486/33 DX	$1845
486/50 DX2	$1965
486/50 DX	$2095
486/66 DX2	$2195

- 8MB RAM & 250MB 12ms Drive Add $280

ESA Local Bus WIN-Station

- 64K Cache SRAM & Expandable to 256K
- 4 MB RAM & Built-in 487 Math Coprocessor
- 1.2 MB 5.25" & 1.44 MB 3.5" Floppy Drives
- 170 MB 15ms IDE 64K Cache Drive

-Bit **VL-Bus WinMax S3-805** Graphics Accelerator
v. 1MB RAM (Up to 1280x1024 & 16.7M Colors)
(Up to 50X faster than Standard SVGA)

- 14" Non-interlaced .28mm Super VGA Monitor

(Bigger edge to edge 72Hz Flicker-Free)

- 2 Serial, 1 Parallel & 1 Game Ports
- Enhanced 101-key Keyboard
- Hi-Resolution 400DPI Serial Mouse

486/33 DX	$1695
486/50 DX	$1975
486/66 DX2	$2045

- 8MB RAM & 210MB 12ms Drive Add $280

32-Bit VL-Bus IDE Hard Disk Controller Add $60

VESA Local Bus Tornado

- 64K Cache SRAM & Expandable to 256K
- 8MB RAM & Built-in 487 Math Coprocessor
- 1.2 MB 5.25" & 1.44 MB 3.5" Floppy Drives
- 32-Bit VL-Bus Hard Disk Controller (2.5X faster)
- 250 MB Ultra Fast 12ms IDE 64K Cache Drive

Bit **VL-Bus WinMax S3-805** Graphics Accelerator
2.5 times faster than ATI Ultra Pro in CAD test)

- Flat Screen Non-interlaced .28mm Color Monitor
- AutoCAD Display List Driver
- 2 Serial, 1 Parallel & 1 Game Ports
- Enhanced 101-key Keyboard
- Hi-Resolution 400DPI Serial Mouse

486/33 DX	$2095
486/50 DX	$2375
486/66 DX2	$2445

- 7" Flat Screen Non-interlaced Monitor Add $440

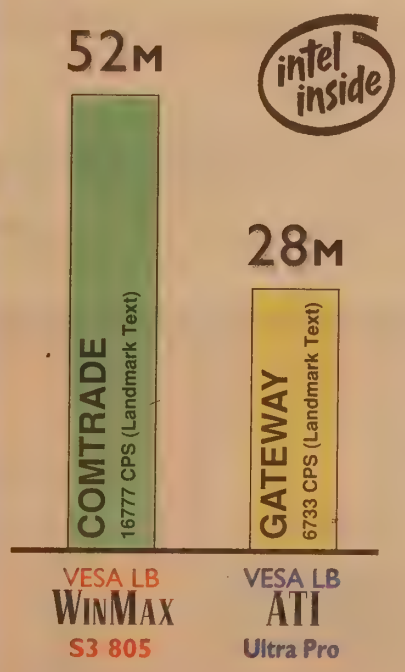
The Intel Inside Logo is a trademark of Intel Corporation"

VESA Standard Local Bus Now.

ONCE AGAIN "THE COMTRADE PC" HAS THE COMPETITION RUNNING FOR COVER. IN REVIEW AFTER REVIEW, CRITIC'S APPLAUD COMTRADE/MAXIMUS SHOCKING SPEED AND EXTRAORDINARY VALUE. ACCORDING TO THE LATEST PC MAGAZINE, COMTRADE'S 486 "HAS THE PERFORMANCE ISSUE LICKED." SO MUCH SO THAT PC MAGAZINE RANKED COMTRADE'S 486 EISA WINSTATION NUMBER 2 OUT OF 63 SYSTEMS IN THEIR 486 REVIEW "**MOST BANG FOR THE BUCK**" ANALYSIS (SEPTEMBER 1992). "IT'S A VERY SWIFT GRAPHICS MACHINE," SAYS COMPUTER SHOPPER (MAY 1992). "THAT DESERVES SERIOUS CONSIDERATION FROM ANYONE WHO WANTS TO JUICE UP WINDOWS." AND NOW FASTER EVER, COMTRADE/MAXIMUS'S LATEST VESA STANDARD LOCAL BUS WINMAX S3-805 IS EVEN 3 TO 5 TIMES FASTER THAN ANY OF OUR PREVIOUSLY REVIEWED SYSTEMS.

Comtrade Kicks Gateway's Bus!

In Comparison With Gateway 2000's VESA Local Bus ATI Ultra Pro.



Based on WinMarks 2.5 as of Dec 1992
***Million Pixels Per Second (486/66DX2)*
Standard Trident SVGA has only 1.4M WinMarks
VL-Bus TSENG ET-4000 has a 3.8 WinMarks

READ THE BENCHMARKS AND WEEP. COMTRADE/MAXIMUS'S NEW WINMAX S3 VESA STANDARD LOCAL BUS GRAPHICS SYSTEM PASSES THE OTHERS LIKE THEIR STANDING STILL. NOT ONLY DOES OUR LATEST VL-BUS WINMAX S3 BEAT ATI ULTRA PRO HANDS DOWN IN WINDOWS PERFORMANCE TEST, IT IS ALSO UP TO 2.5X FASTER IN THE LANDMARK DOS TEXT MODE AND CAD/CAM (WINTACH) TEST. COMBINE THIS UNPRECEDENTED PERFORMANCE WITH A SOLID REPUTATION FOR QUALITY AND SERVICE, AND A VERY COMPETITIVE PRICE AND IT'S NO WONDER COMPUTER SHOPPER (NOVEMBER 1992) CALLED THE COMTRADE 486 "A SPLENDID SYSTEM BACKED BY FIRST RATE SUPPORT."

We Stand Behind Our Products

One Year Parts & Labor Warranty
30 Day Money Back Guarantee

486 EISA Local Bus Rocket

- Ultimate Full 32-Bit Screaming Performance

256K Ultra Fast Write Back Cache SRAM

- 8 MB RAM & Expandable to 128MB
- 1.2 MB 5.25" & 1.44 MB 3.5" Floppy Drive
- 250 MB Ultra Fast 12ms IDE 64K Cache Drive
- 32-Bit EISA Hard Disk Controller (4X faster DTR)
- 32-Bit **VL-Bus WinMax S3-805** Graphics Accelerato

(Up to 50X faster than Standard SVGA)

- 15" Flat Screen Non-interlaced .28mm SVGA Monitor
- 2 Serial, 1 Parallel & 1 Game Ports
- Enhanced 101-key Keyboard
- Hi-Resolution 400DPI Serial Mouse

486/33 DX	$2245
486/50 DX2	$2395
486/50 DX	$2495
486/66 DX2	$2595

- 17" Flat Screen Non-interlaced Monitor Add $440

VESA Local Bus SVGA

- 64K Super Fast Write-Back Cache SRAM
- 4 MB RAM & Built-in 487 Math Coprocessor
- 1.2 MB 5.25" & 1.44 MB 3.5" Floppy Drives
- 170 MB 15ms IDE 64K Cache Drive
- 32-Bit **VL-Bus** Accelerated Super VGA with

1MB RAM (Up to 1280x1024 & 16.7M Colors)
(Up to 10X faster than Standard SVGA)

- 14" Non-interlaced .28mm SVGA Monitor

(Bigger edge to edge 72Hz flicker-free display)

- 2 Serial, 1 Parallel & 1 Game Ports
- Enhanced 101-key Keyboard
- Hi-Resolution 400DPI Serial Mouse

486/33 DX	$1625
486/50 DX	$1875
486/66 DX2	$1945

- 8MB RAM & 250MB 12ms Drive Add $280
- 32-Bit VL-Bus IDE Hard Disk Controller Add $60

Two Convenience Locations

COMTRADE
818.961.6688
Fax 818.369.1479
Hours: 9:00-7:00 Pacific Mon-Sat
15314 East Valley Boulevard
City of Industry, California 91746
Freeway 60 Exit Hacienda Blvd (North)

MAXIMUS
818.585.0888
Fax 818.585.1701
Hours: 9:00-7:00 Pacific Mon-Sat
912 East Union Ave
Pasadena, California 91107
Freeway 210 Exit Lake Ave (South)

Service, Support, Quality, & Price.

386/486SX Series

386SX/25MHz $379
386SX/33MHz $399
486SX/25MHz $509

386DX Series

33MHz/64K Cache $459
40MHz/64K Cache $469

486DX Series

DX33MHz/64K Cache $779
DX50MHz/64K Cache $949
DX2-50MHz/64K Cache $899
DX2-66MHz/64K Cache $1049

SYSTEMS INCLUDE :

- 1MB Memory
- Digital Mini-Tower Case
- 220W P/S (115/230V)
- 2S/2P/1G Ports
- IDE FD/HD Controller
- 1.2MB or 1.44MB FD
- Hercules Comp. Graphic
- TTL Hi-Res. Monitor
- 101 Enh. Keyboard (Japan)
- Clock/Calendar w/B.B.U.
- Hi-Res. Mouse & Software
- Operational Manual

- ONE YEAR WARRANTY
- CUSTOMER SUPPORT
- FULLY IBM COMPATIBLE

486 VESA Local Bus

- 256K Ultra Fast Write Back Cache SRAM
- 4MB RAM Installed
- 32MB Expandable
- Intel 487 Math Coprocessor
- 8K Cache Int.
- 1.2 & 1.44MB FD
- 170MB HD 13ms W/64K Cache
- 32 Bit VESA Local Bus FD/HD Controller
- 2S/1P/1G
- Hi-Res. Mouse
- 101 Keyboard(Japan)
- Non-Interlaced .28 Super VGA Color Monitor
- 32 Bit VESA Local Bus Super VGA Card W/1MB (Windows Accelerator, 1280x1024, 16M x Color)
- Clock/Calendar W/Battery Bkup
- Operation Manual
- Digital Mid-Size Tower Case
- 230W P/S (110/230V)

DX-33/50MHz ... $1649/$1849
DX2-50/66MHz .. $1799/$1949

MONTHLY SPECIALS

Super VGA Color Monitor	$209
14" F/S VGA P/W Monitor	104
14" Flat Screen P/W Monitor..	89
16 Bit Super VGA Card w/512K	39
16 Super VGA Card w/1MB	59
Hi-Res. Mouse & Windows	49
2400 Int. Modem & Software	34
9600 S/R Fax & 2400 Modem	54
Hi-Res. Mouse & Software	19
Trackball Mouse & Software	39
Golden Sound (Blaster)	64
Golden Sound (Blaster) Pro	114

486 EISA/VESA Local Bus

- 256K Ultra Fast Write Back Cache SRAM
- 8MB RAM Installed
- 128MB Expandable
- Intel 487 Math Coprocessor
- 8K Cache Int.
- 1.2 & 1.44MB FD
- 254MB HD 13ms W/64K Cache
- 32 Bit VESA Local Bus FD/HD Controller
- 2S/1P/1G•Hi-Res. Mouse
- 101 Keyboard(Japan)
- Non-Interlaced .28 Super VGA Color Monitor
- 32 Bit VESA Local Bus Super VGA Card W/1MB (Windows Accelerator, 1280x1024, 16M Color)
- Clock/Calendar W/Battery Bkup
- Operation Manual
- Digital Full-Size Tower Case
- 250 W P/S (110/230V)

DX-33/50MHz. ... $1999/$2199
DX2-50/66MHz .. $2149/$2299

SYSTEM OPTIONS

14" Flat Screen:	
TTL/Analog	add $29/79
Color Super VGA	add $199
Deluxe Medium Tower Case	add $29
Deluxe Tower Case	add $49
NOTEBOOKS	**Call**

QUANTITY DISCOUNTS

8 Bit Arcnet Card	$39
16 Bit Arcnet Card	54
4 Port Passive Hub	9
IDE FD/HD Controller	10
MGP	10
Super VGA Card W/512KB	34
Hi-Res. Mouse & Software	14
Logitech Trackman Mouse	54
CHINON 1.2MB FD	46
CHINON 1.44MB FD	41

BAREBONES

(Includes Case, Power Supply, and Motherboard w/o RAM)

AT-286 12MHZ Bare Bone	$129
AT-286 20MHz Bare Bone	139
AT-386SX 25MHz Bare Bone	179
AT-386SX 33MHz Bare Bone	199
AT-386 40 W/64K Bare Bone	249
AT-486SX 25MHz Bare Bone	289

DEPOT REPAIR

- Fast, Reliable & Guaranteed
- Volume Accounts, Call For Special Pricing!!!
- Call For Other Depot Solutions To On-Site Maintenance

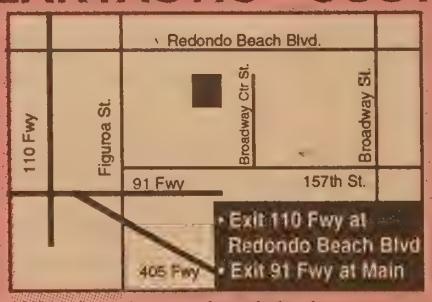
DATA GENERAL • BLOWER MOTORS • SPINDLE MOTORS • LINEAR MOTORS • R/W HEADS • DISK DRIVES • TAPE DRIVES • CRTs • PRINTERS • CPUs MEMORIES • COMMUNICATIONS • **CAD/CAM** TEKTRONIX • MITSUBISHI • V.M.I. • RAMCOM SYSTEMS **PERSONAL COMPUTER** • IBM-PC/XT/AT & COMPATIBLE • COMPAQ • LEADING EDGE • APPLE

WE DO: NOVELL • LANTASTIC • CUSTOMIZE • UPGRADE

GATETRONIX Control Systems Inc.

Hardware & Software Services
15541 Broadway Center Street, Gardena, CA 90248
BROADWAY CENTER BUSINESS PARK
(corner of Broadway & 157th St.)

Tel: (310) 715-6086
Fax: (310) 715-6649



*All trademarks are acknowledged
**All GCS Systems are fully assembled & tested.
Prices subject to change without notice.

BUSINESS HOURS
MON – FRI 9:00 – 6:00 PM
FINANCING AVAILABLE

VISA MasterCard AMERICAN EXPRESS

GCS/ALL Micro Services

Valencia Industrial Park
27720 Avenue Scott
Unit 180
Valencia, CA 91355

(818) 972-9832
(805) 257-1925

MultiMedia & beyond

one as my desktop background), and come in a variety of collections: Wild Places, Business Backgrounds, Money, Island Designs, and others. The pricing of MediaClips collections makes them an excellent choice for on-screen or small, undemanding print applications. The still images are available in 8- and 24-bit resolution; the sound samples are 8-bit 22KHz.

• While not strictly a clip media library, Nautilus, a magazine-like subscription CD, does provide still, audio, and QuickTime clips each month. The quality and licensing varies, but there is usually useful material every month. In addition, there is a variety of software utilities, articles, and other items of interest.

• **The Image Bank CD** is one example of an existing image provider's attempt to straddle the fence on selling images. Their license allows only for noncommercial in-house use, essentially "for position only" usage. For this they expect you to pay? While the image quality is sometimes good, it tends to vary, and their interface is decidedly strange. They create a virtual desktop and redesign the Mac interface. If you can adjust, this CD offers quite a bit of utility with good keyword searches. This disc is bundled with VideoShop, a QuickTime editing application.

• Ever the pioneers, **BMUG** jumped on the first release of QuickTime and produced a CD full of short clips and stills for those without digitizing hardware to experiment with. Its HyperCard interface is slow, the clips and stills mostly of moderate quality at best; this is best suited to its original purpose and not as a source of professional-quality clip media.

While getting clip media in digital form alleviates the need to own digitizing hardware, the ease with which you can locate a specific file on a CD depends on the interface provided with the clips. Some companies have made the investment in programming a decent, sometimes excellent interface. Others offer only a printed listing of the contents.

• A perfect example of specialized imagery, **SKY: Volume One** is a collection of one hundred stills of sky images: striking cloud formations, sunsets, and the like. Each image was scanned on a drum scanner at 2000dpi, then JPEG compressed. These images would be suitable for printing, for example at 133 lines at 10 inches in size. The CD includes a JPEG decompression utility. No preview interface is included, but a printed sample of each image is included.

• **Digital Photographics** takes a more scattershot approach to image selection, but also offers excellent image quality. Both screen-resolution and high-resolution versions are provided, a HyperCard interface is provided, and an educational "Electronic Photography Resource" HyperCard stack is supplied. A Try-Out version of Photoshop is also included. The dynamic range on these images is excellent.

• **World Travel Europe** is a collection of travel photos. The interface is marginal at best, but the image quality is good, with most images in the 1.5 to 2.5MB size. There are, however, a considerable number of restrictions placed on the use of the images, a reflection of the source—two commercial stock photographers who, I suspect, are more interested in preserving their stock prices than making it convenient for consumers to use their images. This is just one CD from a series by this publisher; the rights vary depending on the source of the originals. The restrictions may be less onerous on other collections.

• **Rick Doyle** is a sports photojournalist whose work has appeared in *Sports Illustrated*, *Surfing Magazine*, and other publications. His **Digital Imagery Volume 1** is a collection of water sports shots. The browser interface provided with the images is minimal, but does show thumbnails. The images are provided in 24-bit color and 8-bit gray scale. File size varies from 1 to 4MB, and most images are pretty good. The only restriction on usage is the requirement for an artist's credit, a reasonable request.

• **PhotoDisc** is a refreshing balanced approach from 21st Century Media. Using images licensed from stock houses, a reasonable license, with an excellent interface and great image quality (maximum about 18MB), this is a pricey but usable product. The image files are large enough to allow 5 x 7 printing at production standards, and with hundreds of images per CD you have a decent variety to search through. The interface offers keyword searching, image information, and copying. It's worth noting that Kodak has licensed this interface.

• Sometimes one has to adjust one's plans based on experience. Such was the case with **D'pix Folio 1**. This three-CD collection of 22MB high-

continued on page 128

RESOURCES:

Image Bank
Diva Corp.
222 Third St.
Cambridge, MA 02142
(617)491-4147

BMUG TV-ROM
BMUG
1442A Walnut St., #62
Berkeley, CA 94709
(510)549-BMUG

SKY: Volume One
CD Folios
6754 Eton Ave.
Canoga Park, CA 91303
1-800-688-3686

Digital Photographics
Husom & Rose
Photographics
1988 Stanford Ave.
St. Paul, MN 55105
(612)699-1858

Europe Travel & Digital
Video Library
Available from Educorp

Rick Doyle Digital
Imagery
PO Box 599
Solana Beach, CA 92075
(619)481-6792

PhotoDisc
21st Century Media
2013 4th Ave., 2nd Floor
Seattle, WA 98121
1-800-528-3472

Folio One
D'pix
PO Box 572
Columbus, OH 43216
1-800-238-3749

Vintage Medley
Seattle Support Group
422 4th Ave. SE
Pacific, WA 98047
1-800-995-9777

CLIP MEDIA TITLES

Publisher and Product	Audio	Stills	QT Video	List Price	Interface	Quality	License
Mr. Sound Effects	√			$29.95	Poor	11 & 22KHz	No restrictions
Music Bytes	√			$99.95	Very Good	22KHz	No restrictions: notify usage, provide credit
WraptureReels One	√	√	√	$199.00	Excellent	30fps Excellent	No restrictions
MediaClips	√	√	√	$39.95	Very good	1MB Good	Credit artist, credit Aris
Nautilus	√	√	√	$137.40/yr	Good	Varies	Varies—usually none or credit artist
Image Bank	√		√	$599.00	Good but stra	Varies	Noncommercial in-house
BMUG's TV-ROM		√	√	$50.00	Fair	1MB Fair	Credit artist, credit BMUG
Sky: Volume One		√		$129.00	Printed index	10–15MB Very Go	No restrictions
Digital Photographics		√		$125.00	Good	8MB Excellent	No restrictions
Europe Travel		√		$129.95	Fair	1.5–2.5MB Good	Many restrictions
Rick Doyle Digital Imagery—Vol 1		√		$79.00	Fair	1–4MB Good	Credit artist
PhotoDisc		√		$395.00	Very Good	8MB–18MB Good	Not used in product for sale
Folio 1		√		$499.95	Printed index	22MB	No restrictions
Vintage Medley		√		$79.95	Poor	700K–9MB Varie	No restrictions
Bare Assets			√	$179.00	Good	Good–Both CD an	No usage allowed
Digital Video Library			√	$149.95	Fair	Varies	Non-broadcast QT, noncommercial printing
AdClips—Videotape			√	$299.00	Printed index	Good for VHS	Unlimited non-broadcast

Note: All licenses restrict redistributing contents as clip art or as part of a clip art collection.

ASEAN COMPUTER TECHNOLOGIES

I N C O R P O R A T E D

• 971 FAIRWAY DRIVE • WALNUT, CALIFORNIA 91789 •

80486LB SYSTEM VESA - LOCAL BUS

ORCHID

intel inside

- 8K INTERNAL CACHE,
- 256K EXTERNAL CACHE
- ORCHID VESA 486 SUPERBOARD
- ORCHID FAHRENHEIT 1280 ACCELERATOR CARD
- VESA LOCAL BUS INTERFACE, 1280X1024
- IDE INTERFACE & AT I/O
- 4MB RAM (EXP. TO 32MB)
- MEDIUM TOWER CASE W/230W P.S.
- TEAC 1.2 & 1.44 FLOPPY DRIVES
- KEYTRONIC KT2001 101 ENHANCED K/B
- 125MB IDE HD (15 MS)

ORCHID ORCHID ORCHID — MADE IN U.S.A. — ORCHID ORCHID ORCHID

ORCHID

486DX-33LB $1450
486DX-50LB $1650
486DX2-66LB $1750

ACTi EISA 486DX SYSTEMS

Unleash the power "EISA" 32Bit System

- HIGH PERFORMANCE 32BIT IDE ADAPTER "DTC 2290" SUPPORTS 4 HD & 4 FDD
- ORCHID PROIIS-EISA 32BIT SVGA CARD

The ProDesigner IIs/EISA operates in the EISA Bus taking advantage of its advanced circuitry and high speed design to deliver optimum performance and compatibility in various configurations.

- 4MB RAM
- 256K CACHE MEMORY
- TEAC 1.2MB & 1.44MB FLOPPY DRIVES
- AT I/O (2SER/PAR/GAME)
- 101 ENHANCED KEYBOARD
- 125MB IDE HARD DRIVE

intel inside

EISA 486DX-33/50MHZ $1680/1780
EISA 486DX2-66MHZ $1880
EISA LB 486DX-33/50/66MHZ ..... call

ONE YEAR PARTS AND LABOR WARRANTY ON ALL SYSTEMS

ASEAN WORKHORSES !!
HIGH PERFORMANCE SYSTEMS ARE PRE-TESTED A MINIMUM OF 48HRS TO ENSURE MAXIMUM QUALITY & RELIABILITY

WHOLESALE $$ TO THE PUBLIC
GOVT. P.O., CORP. ACCTS WELCOME

486DX UPGRADE SPECIALS

- ADDITIONAL 4MB ..... call
- 170MB HDD IDE ..... add $50
- 210MB HDD IDE ..... add $100
- 330MB HDD IDE ..... call
- 540MB HDD IDE ..... call
- SCSI AVAILABLE ..... call

14"	EDISON .28mm (1024x768) SVGA (I)	add $230
14"	EDISON .28mm (1024x768) SVGA (NI) Low Rad	add $260
14"	CTX5468 .28mm (1024x768) I/NI	add $260/290
14"	VIEWSONIC 6E .28mm NI (1024x768) V5E	add $330/395
15"	VIEWSONIC 6FS .28mm NI (1280x1024)	add $510
15"	ARCUS 1568 .28mm NI (1280x1024)	add $400
15"	NEC 4FG .28mm NI (1024x768)	add $750
17"	EDISON .26mm NI(1280x1024)	add $800
17"	VIEWSONIC 7 .28mm NI (1280x1024)	add $950
17"	SONY 1604 .25mm NI (1024x768)	add $980
20"	ADDONICS [illegible]	add $1200

ISA 486 UPGRADE SPECIALS

- PVGA OEM w/Accelerator Chip ..... add $65
- PVGA OEM w/Hi-Color Chip ..... add $25
- Diamond HiColor SpeedStar 24X ..... add $100
- Diamond Stealth S3 Accelerator ..... add $165
- Orchid Pro-Designer IIS Hi-Color ..... add $100
- Orchid Fahrenheit 1280 Accelerator ..... add $165
- ISA IDE Caching Ctrl w/512K ..... add $110

ORDER HOTLINE

sales: (909) 598 2828
fax: (909) 598 5748

CYRIX 486DLC-33 SYSTEM

- 4MB RAM • 64K CACHE • 1.2MB/1.44MB FDD
- 2SER/PAR/GAME • 101 K/B • 126MB HDD

ONLY $950

GIGABYTE 80486VLB SYSTEM VESA - LOCAL BUS

- 8K INTERNAL CACHE, 256K EXTERNAL
- G-HOST 4000PLUS VIDEO ADAPTER
- 32BIT SVGA BOARD (TSENG LAB ET4000), 1280X1024
- IDE INTERFACE & AT I/O (2SER/PAR/GAME)
- 4MB RAM (EXP. TO 32MB)
- MEDIUM TOWER CASE W/230W P.S.
- TEAC 1.2 & 1.44 FLOPPY DRIVES
- KEYTRONIC KT2001 101 ENHANCED K/B
- 125MB IDE HD (15 MS)

intel inside

ATI VLB MACH 32 W/2MB VRAM ACCELERATOR CARD, 16 MILL. COLORS ..... ADD $280
VLB INTEGRATED IDE + I/O(2S/P/G) .. ADD $45

- GBT VESA Local Bus 486DX-33 ... $1200
- GBT VESA Local Bus 486DX2-50 . $1350
- GBT VESA Local Bus 486DX2-66 . $1450

ASEAN ISA 486DX SYSTEMS

- 4MB RAM
- 256K CACHE MEMORY
- TEAC 1.2MB FLOPPY DRIVE
- TEAC 1.44MB FLOPPY DRIVE
- AT I/O (2SER/PAR/GAME)
- 101 ENHANCED KEYBOARD
- 1MB SVGA CARD
- 125MB IDE HARD DRIVE (15 MS)

intel inside

SPECIAL W/EDISON 1428SVN LOW RADIATION MONITOR

486DX-33MHz INTEL $1350
486DX2-50MHz INTEL $1500
486DX-50MHz INTEL $1550
486DX2-66MHz INTEL $1655

ACTi 286, 386SX & 386DX & 486SX SYSTEM

- 1.2MB FLOPPY DRIVE
- 1.44MB FLOPPY DRIVE
- AT I/O (2SER/PAR/GAME)
- MINI TOWER/DESKTOP W/ P.S.
- 16BIT SVGA W/512K
- 1:1 H/F CONTROLLER
- 14" SVGA MONITOR (1024X768) HI-RES

HARD DISK	386SX-25MHz w/2MB RAM	386DX-25MHz w/4MB RAM	386DX-33MHz w/128K CACHE w/4MB RAM	386DX-40MHz w/128K CACHE w/4MB RAM	486SX-25MHz w/4MB RAM	LIMITED SUPPLY 486DX-25MHz w/4MB RAM
85MB	$790	$880	$900	$910	$980	$1050
120MB	$840	$930	$950	$960	$1030	$1100
170MB	$880	$970	SPECIAL $980	SPECIAL $990	SPECIAL $1060	$1140

INTEL, MICROSOFT, SOUNDBLASTER PRO ARE ALL TRADEMARKS OF THEIR RESPECTIVE COMPANIES.

WESTERN DIGITAL Diamond adaptec ViewSonic MICRONICS COMPUTERS INC. EPSON CONNER SONY

ASEAN COMPUTER TECHNOLOGIES
INCORPORATED

MONTHLY SPECIALS

ISA 486DX-33 w/256K Cache & Intel CPU	$450
ISA 486DX2-66 w/256K Cache & Intel CPU w/FREE Heat Sink + Cooling Fan	$680
Cyrix 486DLC w/256K Cache & CPU	$320
Teac 2 in 1 FD505 (1.2 & 1.44) Floppy Drive	$120
Maxtor 7213 213MB (12ms) IDE HDD	$305
Conner 540MB IDE (12ms) HDD	$780
IDE Promise Cache Ctrl. w/1.5MB (8MB exp.)	$120
14" Edison 1428 NI .28mm SVGA Low Radiation	$275
17" Edison 1726 .26mm super fine pitch Ultra SVGA 1280x1024	$750
20" Addonics (Acer) .31mm ultra hi-res NI 1280x1024	$1280

COMMUNICATIONS
FAX-MODEMS/MODEMS

14.400 S/R w/v.32 & v.42 (Int.)	$198
14.400 S/R w/v.32 & v.42 (Ext.)	$248
9600 Baud v.42 Modem (Int.)	$179
96/24 Baud Fax-Modem (Int.)	$55
2400 Modem (Int.)	$30

$499 MULTIMEDIA KIT $499

Enjoy the experience of the ultimate multimedia performance on your ordinary PC. Featuring the best-selling SOUND BLASTER PRO audio card, high performance CD-ROM bundled with useful, creative CD softvare; and a MIDI kit for connecting MIDI instruments. Compatible with all new multimedia software titles & thousands of existing games and programs.

MPC Multimedia PC · SOUND BLASTER PRO · SB

CREATIVE LABS CD-ROM DRIVE

- PANASONIC COMPONENTS
- HIGH-PERFORMANCE INTERNAL DRIVE
- EXEEDS EXISTING MPC STANDARDS
- STORAGE: 630MB (MODE2)
- 64KB RAM BUFFER
- 390 MS ACCESS TIME

WINDOWS 3.1 & MPC COMPATIBLE

SOUND CARD

- BEST-SELLING AUDIO CARD IN THE MARKET FOR -OPERATOR
- 20-VOICE OPL-3 STEREO FM MUSIC SYNTHESIZER
- 8-BIT STEREO DIGITIZED VOICE CHANNEL
- MIXER & AMPLIFIER

BUNDLED SOFTWARE - 5 TITLES

MIDI KIT

- MIDI CABLES & SEQUENCER SOFTWARE

AUDIO COMPATIBLE WITH

- 1000 OF SOUND BLASTER & AD-LIB BASED PROGRAMS

FAX: (909) 598 5748

ORDER HOTLINE
(909) 598 2828

TECH SUPPORT:
(909) 598 5498

CASES W/P.S.

Enhance Desktop w/230W p.s.	$55
Black Enhance Desktop w 200W p.s. & dig. disp.	$70
Mini Tower w/200W (special) w/230 p.s.	$45/48
Mini Tower w/230W p.s. & dig. display	$50
Black Mini Tower w 230W p.s. & dig. display	$65
Med. Tower w/230W p.s. & dig. display	$78
Full Tower w/250W p.s. & dig. display	$95
Full Tower w/250W p.s. & dig. disp. w/2 fans	$105
Black Full Tower w 250W p.s. & dig. display	$125
Slim Line Case w 220W p.s.	$75
Super Tower (File Server) 2 fans--10 bays w 300W p.s.	$185

VIDEO DISPLAY CARDS

ACTi 16bit w/256K 800x600	$32
Tseng Lab ET4000 w/1MB True-color	$80
AVGA-3 1MB Graphics Accelerator	$70
TVGA-9000 VGA Card w/Trident 9000 Chipset, 512K	$40
TVGA-8900C SuperVGA Card w/Trident 8900C Chipset	$55
TVGA-8900C SuperVGA Card w/Trident 8900C Chipset, w/Hi-Color Chip	$62
PVGA OEM w/512KB (WD Chipset)	$45
PVGA OEM w/1MB (WD Chipset)	$70
PVGA Graphics Accelerator w/1MB w/Hi-Color Chip	$115
ATi Ultra Plus (1280x1024, 2MB Dram)	$320
ATi Ultra Plus (1280x1024, 2MB Dram) 1280x1024 Non-interlaced, 2MB VRam	$420
Diamond SpeedStar-24X 1MB VGA Card (16 mil. colors)	$150
Diamond Stealth 1MB (VRam) Windows Accelerator	$205
Orchid Pro IIS 1MB VGA Card w/Sierra RAMDAC	$140
Orchid Pro IIS-E 1MB EISA VGA Card w/Sierra RAMDAC	$160
Orchid Fahrenheit Windows Accelerator 24Bit, 16.7 mil. colors w/1MB	$180
Orchid Fahrenheit VA Windows Accelerator 1MB w/Voice Annotation 24Bit, 16.7 mil. colors 1280x1024, Audio capabilities	$220
Mono Graphic w/Printer port	$15
VESA LB VIDEO CARDS - see under VLB M/B	

MISCELLANEOUS

Colorado Tape Back-up 120MB	call
Colorado Tape Back-up 250MB	call
Jumbo Tracker JT10/JT20 Colorado parallel port Tape Back-up	call
External Drive Kit KE-09 (no adapter)	$80
Tape Drive Adapter AB-11 (for ext.)	$40
FC-10 500Kb/s-1Mb/s Adapter Kit	$90
TC-15 Data Compression Adapter Kit	$189
Tape Back-up Cartridge 120/250MB	$20/22
2400 int/ext w/MNP	$35/40
9600 v.32 int/ext w/MNP	call
9600/2400 Fax/Modem w/MNP7	$56
14.400 Modem int w/v.32/v.42 w/Fax	$205
Sony CD ROM 31A (540MB/490MS) INT.	$260
Sony CD ROM 535 (540MB/340MS) INT	$290
Sony CD ROM 535 (540MB/490MS) EXT.	call

MOTHERBOARDS

286-12Mhz (4 M exp.)	$55
286-16Mhz/286-20Mhz (4M exp.)	$75/80
386-SX25/SX33/SX40Mhz	$100/110/120
386-DX25 w/o CPU; w/CPU OPTI	$90/160
386-33 128K cache w/o CPU; w/CPU OPTI	$95/170
386-40 128K cache w/oCPU; w/CPU OPTI	$100/180
386-33 128K cache w/o CPU; w/CPU UMC	$90/165
386-40 128K cache w/oCPU; w/CPU UMC	$95/175
486SX-25 0K cache w/o CPU; w/CPU OPTI	$105/call
486DX-33MHz 128K cache w/o CPU OPTI	$130
486DX2-50MHz 128K cache w/o CPU OPTI	call
486DX-50MHz 128K cache w/o CPU OPTI	call
486DX2-66MHz 128K cache w/o CPU OPTI	call
486DX-33MHz 128K cache w/o CPU UMC	$125
486DX2-50MHz 128K cache w/o CPU UMC	call
486DX-50MHz 128K cache w/o CPU UMC	call
486DX2-66MHz 128K cache w/o CPU UMC	call
EISA 486DX-33 64/256K cache	call
EISA 486DX-50 64/256K cache	call

VESA Local Bus M/B w/o CPU:

Orchid VLB 486DX-33 w/256K Cache	$290
Orchid VLB 486DX-50 w/256K Cache	$305
Orchid VLB 486DX2-66 w/256K Cache	$305
UMC VLB 486DX-33 w/256K Cache	$170
UMC VLB 486DX2-50 w/256K Cache	$185
UMC VLB 486DX2-66 w/256K Cache	$185

VESA Local Bus Video Cards & Controllers:

ATI VLB Mach 32 accelerator 2MB VRAM	$410
Orchid VLB Fahrenheit Win accelerator w/1MB	$180
Genoa VLB w/1MB	$155
ET4000 VLB Tseng Lab w/1MB True-color	$135
NEW: VLB w/S3 Accelerator Chip	call
Diamond VLB 1MB Accelerator	call
VESA LB Super IDE ctrl. w/I/O (2H/2F, 2s,p,g)	$55

H/F CONTROLLERS

IDE 1:1 2H/2F Ctrl (Qty 20+ $8)	$15
Super IDE 2H/2F w/AT I/O (Qty 20+ $15)	$22
IDE 1:1 2H/4F Ctrl I-40	$35
IDE 1:1 2H/2F Ctrl w/ROM (for Networks)	$45
Promise DC99M ISA IDE Ctrl w/512K Cache (8.5MB exp.)	$120
Promise DC100M ISA IDE Ctrl w/I/O w/512K Cache (8.5MB exp.)	$145
Promise DC2032 ISA IDE Ctrl w/I/O w/0K Cache (16MB exp.) 4HD/2FD	$165
LongShine (LCS) ISA IDE Ctrl (UNIX,ZENIX, Novell Drivers +CAD) 4H/2F Super Fast	$165
LCS EISA IDE Ctrl w/1MB Cache (16MB exp.)	call
DTC 2290 EISA IDE Ctrl 4HD/4FD, 8MB/sec	$125
DTC 3290AS EISA to SCSI Cache Ctrl. ASPI comp. Host adapter, 512K (4MB exp.)	$365
DTC 3292 EISA SCSI Ctrl (non-cache).	$330
MFM, AT 1:1 H/F Ctrl/RLL AT 1:1	$40/60
ADAPTEC SCSI 1522/1522K	$100/150
ADAPTEC SCSI 1542BK/1542BK+	$250/310
ADAPTEC SCSI 1742K EISA Bus Master	call
SCSI ADAPTEC OEM H/F Ctrl w/kit Adaptec 1522K compatible	$125

KEYBOARDS

BTC 101 Enhance 5339	$25
Lite-On 101	$35
Keytronic 101 KT2000 (USA)	$45
Fujitsu 4700 101	$45
Focus 2001 w/Dust Cover	$35
F8000 111 Keys w/Calculator (soft)	$45
Focus 9000 128 Keys w/Calculator	$58
BLACK ACTi 101 Enh. k/b	$42
BLACK Focus 2001 101 Enh. k/b	$40

MONITORS
Authorized Viewsonic Dealer

12" Mono Monitor (Amber)	$70
14" Mono Monitor (Amber or P.W.)	$88
14" Mono VGA (P.W.)	$105
14" VGA Monitor MQ (640x480)	$190
14" CTX5468/Arcus SVGA (.28mm 1024x768)	$255
14" Black Arcus SVGA (.28mm)	$275
14" CTX5468 N/Arcus 1448 SVGA Multisync Non-interlace (.28mm 1024x768)	$285
14" Black Arcus NI (.28) 1024x768 Multisync	$300
14" Edison 1439 SVGA (.39mm 1024x768)	$200
14" Edison 1428 SVGA (.28mm 1024x768)	$230
14" Edison 1428 SVGA Low Radiation Non-interlace (.28mm 1024x768)	$280
14" Viewsonic 4E Multiscan (.28mm 1024x768)	$295
14" Viewsonic 5E Non-interlace (.28mm 1024x768) 72Hz Refresh	call
14" Viewsonic 6E Non-interlace (.28mm 1024x768)	call
15" Arcus SVGA Non-interlace(.28mm 1280x1024)	$400
15" MAG MX-15H (.28mm 1280x1024)	$575
15" Viewsonic 6FS Multi Freq. F/S (.28mm 1280x1024) 72Hz Low Radiation	call
17" Edison 1726 Multisync Non-interlace (.26mm 1280x1024)	$755
17" MAG MX-17H	$1055
17" Viewsonic 7 Multi Freq. F/S "Top-Rated" (.28 1280x1024) Low Radiation	call
14" Sony 1430 Non-interlace (.25mm 1024x768) Trinitron Tube	$565
17" Sony 1604 Non-interlace (.25mm 1024x768) Trinitron Tube	$960
15" NEC 4FG/ 17" NEC 5FG (.28 mm multiple frequency)	$755/call
20" Viewsonic 8 Multi Frequency (.31mm 1280x1024) Low Radiation	call
20" Addonics Ultra 1280 Multi Frequency (.31mm 1280x1024)	SPECIAL $1300

MATH-CO PROCESSORS

ULSI 387SX-16/20	call
ULSI 387SX-25/33	call
ULSI 387DX-33	$75
ULSI 387DX-40/Cyrix 387-40	$80/85
Intel 387XL-20/25/33	$85

MICE & TRACKBALLS

Level Hi-res Mouse(Serial)	$15
Truemouse TX/AX 300 (Serial)	$20
Truedox Trackball	$35
Logitech Dexxa Mouse	$22
Logitech MouseMan	$68
Logitech TrackMan II (Serial)	$85
Logitech TrackMan Portable	$105
Genius Portable Trackman	call
Microsoft Mouse Serial/Bus	$65/75
BLACK F2 (Serial) Hi-res Mouse	$30

HARD DISKS/FLOPPY DRIVES

CONNER 3000 40MB IDE (28ms)	$135
CONNER 30094 80MB IDE (19ms)	$190
CONNER 30104 120MB IDE (19ms)	$240
CONNER 30174 170MB IDE (17ms)	$275
CONNER 30204 210MB IDE (16ms)	$350
CONNER 32045 210MB SCSI (12ms)	call
CONNER 30254 251MB IDE (14ms)	380
CONNER 3364 360MB IDE (12ms)	call
CONNER 3544 540MB IDE (12ms)	$800
CONNER 3540 540MB SCSI (12ms)	$840
FUJITSU 2624T 513MB IDE (12ms) 5 yr. warr.	$880
FUJITSU 2624FA 513MB SCSI (12ms) 5 yr. warr.	$930
FUJITSU M2266SA 1.2GB SCSI (13ms) 5 yr. warr.	$1355
FUJITSU M2652SA 2.0GB SCSI (11ms) 5 yr. warr.	$2455
MAXTOR 7120A 120MB IDE (17ms)	$245
MAXTOR 7120S 120MB SCSI (17ms)	$290
MAXTOR 7213A 210MB IDE (15ms)	$330
MAXTOR 213S 213MB SCSI (15ms)	$550
MAXTOR 7245A 245MB IDE (15ms)	$370
MAXTOR 340S 337MB SCSI (16ms)	$600
MAXTOR 340A 340MB IDE (16ms) SPECIAL	call
MAXTOR 534A 535MB IDE (16.5ms)	$865
MAXTOR PC-12 1.2GB SCSI (13ms)	$1455
NEC D3756 105MB IDE (18ms)	$225
QUANTUM ELS127 120MB IDE (16ms)	call
QUANTUM Q24A012 240MB IDE (16ms)	call
WESTERN DIG 280 84MB IDE (18ms)	$180
WESTERN DIG 2120 125MB IDE (16ms)	low
WESTERN DIG 170MB IDE (16ms)	$280
WESTERN DIG 2200 210MB IDE (15ms)	low
WESTERN DIG 2250 250MB IDE (14ms)	$350
WESTERN DIG 340MB IDE (16ms)	$?
SEAGATE 351A 42MB IDE (28ms)	$140
SEAGATE 3120A 106MB IDE (17ms)	$225
SEAGATE 3144A 127MB IDE (16ms)	$245
SEAGATE 3283A 240MB IDE (13ms)	$?
TEAC 3105 105MB IDE (17ms)	$195
Epson 1.2/1.44MB	$50/45
Samsung 1.2/1.44MB	$46/40
Teac 1.2/1.44 (Black available +$3)	$52/46
1.44 with kit add	$3
FD505 Teac 2 in 1 1.2+1.44MB FDD	$120

I/O CARDS

AT I/O (2S/P/G) (Qty 20+ $8.50)	$10
Printer card/Game card	$8/9

Minimum order $300 or Qty 10+. Call for Dealer Qty Discounts and other products (Printers, RAM, P.S.) prices.

TERMS:1year warranty on parts & labor. Printers & monitors warranty thru manufacturer. All sales on CHIPS,MONITORS & PRINTERS are final. NO REFUND! All returns are subjected to our approval & must have prior authorization. Return items must be in good condition & in its original packing shipped prepaid & insured. All refunds or credits are less freight & bank charges. All refund items must be returned within 14 days of invoice. There will be a restocking charge of 20% after the 7 days period & within 30 days of invoice. Not responsible for any typographical errors. Price & availability subject to change without any notice. Prices are COD cash/cashiers chk.

EDISON TECHNOLOGY · FUJITSU · Panasonic Office Automation · Seagate · CTX · Addonics · NEC · Maxtor · ORCHID · LORADO MICROSYSTEMS, INC. · STEALTH

AMIGA FOR VIDEO

Multimedia Workstations

The System of Choice

AMIGA is the most cost efficient Multimedia system on the market today. With 6 different models now available, small businesses, large production houses and Fortune 500 companies can have it all on one computer or networked together. *AMIGA* can also run IBM and Macintosh software options.

Products For Every Project

* Newtek Video Toaster
* Single Frame Controllers
* Amilink Edit Controllers
* Genlocks
* Time Base Correctors
* Video Decks
* Dps Personal V-Scope
* Monitors, Printers & Software
* Scanners

Basic to Full Animation Systems

Leaders in computerized Video and Multimedia, we specialize in the Commodore *AMIGA* and the **Newtek** Video Toaster. With over 12 years of experience in the sale and support of Commodore equipment, **Century Computer Systems** is one of the largest *AMIGA* and Video Toaster dealers in the country.

Authorized Newtek/RGB Dealer

* Everyday low discount pricing
* Same day financing (OAC)
* All service work done in-house by expert technicians

Great deals on used equipment

AMIGA Video System
- 68030 - 40MHz
- 120MB Hard Drive
- 9MB RAM
- Color Monitor
- Video Toaster

$3999

** System is multimedia and multitasking. Will run PC software (optional).*

AMIGA 600
with 1084 Monitor & Free Software
$619

AMIGA 1200
with 85MB Hard Drive
Plus Software
$849

AMIGA 1200
WITH 1960 MONITOR
Includes Free Software
$1029

AMIGA 3000
$1395
Includes Free SCALA

AMIGA 4000
SUPER SPECIAL
CALL!

SPECIALS

HARDWARE
- TBC III $829
- GVP 68030 - 40MHz, 4MB RAM, 120MB HD $999
- 1960 Monitor ..... $499 (w/system)

SOFTWARE
- Morph Plus $169
- Aladden $289
- Audio Master IV $59.95
- DSS Sound Studio $79.95
- Caligari 25 ..... NEW
- Taming the Wave ..... NEW
- Vista Pro 3.0 ..... NEW

Offer Good thru 3/20/93.

We will meet any Authorized Dealer price.

Authorized Commodore/Amiga Sales & Service Dealer

CENTURY COMPUTER SYSTEMS

841 E. Whittier Blvd. La Habra, CA 90631

(714) 750-3423 • (310) 697-6977 • (818) 961-4065

continued from page 125

res and medium-res stills was originally sold with only the medium-res images freely available; a fee was required to "unlock" each high-res image. That approach apparently did not yield sufficient sales, and has now been modified. All of the high-res scans are "unlocked" in the current offering. The upside is that you get a tremendous selection of images of excellent quality; the downside is you are still stuck using the complicated retrieval scheme originally designed to "lock" images. The images are compressed and must be first copied in compressed form, then decompressed. This takes a lot of disk space, but the results are worth it.

RESOURCES:

Bare Assets
Space Coast Software
3128 Lake Washington Rd., Ste. 244
Melbourne, FL 32934
(407)242-2040

AdClips
Mediacom
12701 Cottage Mill Ter.
Midlothian, VA 23113
(804)794-0700

•**The Vintage Medley** is a collection of nature and outdoor images in three resolutions. The interface only offers thumbnail previews and full image displays, no searching or automatic copying. The image quality varies quite a bit. Some images are sharp and well exposed, while others look like snapshots.

•The home video rental market took off when adult films became available. With that in mind I decided to take a look at one offering in this genre. **Bare Assets** would fall into the "R" rating category. It's a mix of QuickTime and still images, about the *Playboy*-like level. Two versions of QuickTime movies are provided, one optimized for playback from CD, the other for playback from a hard drive if you've got about 40MB of free space per movie. Other publishers are providing harder stuff if your tastes run in that direction. Given the cost, I suspect videotape has nothing to fear. Note that no reproduction rights are provided.

A 35mm slide digitized with a cheap scanner (or a poorly adjusted one) will have a reduced color fidelity and dynamic range. An out-of-focus or poorly exposed original will never provide a quality digital file. The same applies to audio and video data.

•QuickTime clips on the **Digital Video Library** are of a more sedate nature, ranging from sports, locations, cities, places, and other generic categories. The preview interface is marginal, and the quality of the clips varies greatly. All are limited by QuickTime's data rate, and are designed for on-monitor display only. Since the license agreement prohibits broadcast usage, this is just as well. And since commercial usage is also prohibited, these clips might only serve as place holders.

•Finally I took a look at a videotape of short clips called **AdClips**. Licensed for non-broadcast usage, these clips do avoid being outdated technology-wise by advances in digitizing, but require you to have your own digitizing hardware. The publisher plans to produce a CD version now that QuickTime 1.5 has shipped with the new video compression codes. These clips are available in other higher-quality video formats as well. ■

King Delivers Quality at Unbeatable Prices

486-50MHZ EISA

- 4MB RAM
- 256K Cache
- 1.2 & 1.44 Floppy Drive
- 2S/1P/1G
- Maxtor 130MB Hard Drive
- Mini Tower Case
- 1024 x 768 SVGA 14" Monitor
- 101 Keyboard
- Mouse

CASH DISCOUNT **$1999**

486DX2-66MHz Cache System

- 4MB RAM
- 256K Cache
- 1.2 & 1.44 Floppy Drive
- 2S/1P/1G
- 130MB Hard Drive
- Mini Tower Case
- 1024 x 768 SVGA 14" Monitor
- 101 Keyboard
- Mouse

CASH DISCOUNT **$1677**

486DX-50MHz Cache System

- 4MB RAM
- 256K Cache Memory
- 130MB Hard Drive
- 1024 x 768 14" SVGA Monitor
- 2S/1P/1G
- 1.2MB & 1.44MB Floppy Drive
- High Resolution Mouse
- 101 Enhanced Keyboard
- IDE FD/HD Controller
- Mini Tower Case

CASH DISCOUNT **$1477**

486DX-33MHz Local Bus System

- 4MB RAM
- 256K Cache Memory
- 130MB Hard Drive
- 1024 x 768 14" SVGA Monitor
- 2S/1P/1G
- 1.2MB & 1.44MB Floppy Drive
- High Resolution Mouse
- 101 Enhanced Keyboard
- IDE FD/HD Controller

CASH DISCOUNT **$1499**

486DX-33MHz Cache System

- 4MB RAM
- 128K Cache Memory
- 130MB Hard Drive
- 1024 x 768 14" SVGA Monitor
- 2S/1P/1G
- 1.2MB & 1.44MB Floppy Drive
- High Resolution Mouse
- 101 Enhanced Keyboard
- IDE FD/HD Controller

CASH DISCOUNT **$1239**

486DLC-33MHz Cache System

- 4MB RAM
- 64K Cache Memory
- 130MB Hard Drive
- 1024 x 768 14" SVGA Monitor
- 2S/1P/1G
- 1.2 & 1.44MB Floppy Drive
- High Resolution Mouse
- 101 Enhanced Keyboard
- IDE I/O Card
- Mini Tower Case

CASH DISCOUNT **$1089**

486SX-25MHz Deluxe System

- 4MB RAM
- 130MB Hard Drive
- 1024 x 768 14" SVGA Monitor
- 2S/1P/1G
- 1.2MB & 1.44MB Floppy Drive
- High Resolution Mouse
- 101 Enhanced Keyboard
- IDE FD/HD Controller
- Mini Tower Case

CASH DISCOUNT **$1099**

Miscellaneous

Diamond Speedstar 24X	$175
14" Super VGA Monitor	$250
IDE with I/O	$15
Mouse	$12
Keyboard	$19
CD-ROM	
Sony C535 CD-ROM	$310
Sony C31A CD-ROM	$260
Sound Blaster	$89
Sound Blaster Pro	$189
Fax/Modem	
Fax/Modem (14.4/9600 Baud)	$179
Fax/Modem (9600/2400 Baud)	$60
Modem (2400 Baud)	$35
Modem (1200 Baud)	$19
Tape Back-up	
Colorado 120MB	$155
Colorado 250MB	$225
Case	
Mini Tower Case	$49
Middle Tower Case	$72
Full Tower Case	$91
Motherboard	
486-66MHz w/CPU (256K Cache)	$690
486-50MHz (256K Cache)	$155
486-33MHz w/CPU (256K Cache)	$410
486SX-25MHz w/CPU	$239
486DX-33MHz (256K Cache)	$145
386-40MHz (128K Cache)	$105
386SX-40MHz w/CPU	$129
386SX-33MHz w/CPU	$109
286-20MHz w/CPU	$61

Hard Drive (Maxtor)	
40MB 17ms	$155
80MB 17ms	$199
130MB 15ms	$229
170MB	$265 (Conner)
213MB 15ms	$335
Network Card	
8/16 Bit Ethernet Card	$75/99
8/16 Bit Arcnet Card	$50/70
Novell Netware V.2.2 (5/10 Users)	$500/1000
Printers	
Panasonic 240CPS 24 Pin	$230
Panasonic 192CPS 9Pin	$198
Memory	
1 x 9 (3 Chip) -60	$36
1 x 9 (3 Chip) - 70	$29
4 x 9 (9 Chip) - 70	$135
4 x 9 (9 Chip) - 60	$145
256K - 80 SIMM	$11
256K - 80 SIPP	$ 14
Math Co.	
387DX-40 ULSI	$75
387DX-33 ULSI	$70
387SX-33 ULSI	$70
387DX-25 ULSI	$72
387SX-25 ULSI	$68

386DX-40MHz Cache System

- 4MB RAM
- 128K Cache Memory
- 130MB Hard Drive
- 1024 x 768 14" SVGA Monitor
- 2S/1P/1G
- 1.2MB & 1.44MB Floppy Drive
- 101 Enhanced Keyboard
- IDE FD/HD Controller

CASH DISCOUNT **$939**

386SX-40/33MHZ System

- 2MB RAM
- 130MB Hard Drive (Maxtor)
- 14" VGA Monitor
- 2S/1P/1G
- 1.2MB & 1.44MB Floppy Drive
- 101 Enhanced Keyboard
- IDE FD/HD Controller
- Mouse

CASH DISCOUNT **$849/809**

King Corporation

14424 E. Valley Blvd. • City of Industry, CA 91746

(818) 330-5222

Fax (818) 336-5999

PRICES REFLECT A CASH DISCOUNT ONLY

Terms and Conditions:

- 15% Restocking Charge
- Prices Subject to Change Without Notice.

Bring in Any Published Advertised Price and We'll Beat It! Warranty: 1 Year Parts and 2 Years Labor Please call for prices and configurations not listed.

Continued from page 108

categorization, and number and shape recognition. At Level 3 (ages 8–9) experienced readers get to use context to construct meaning, make inferences, draw conclusions, and follow written directions.

The program is installed from compressed files on 1.2MB 5.25" or 720K 3.5" disks. After installation it takes up an impressive 6MB of hard disk space. The 32-page manual is illustrated with line drawings and screen shots, and includes a complete list of the four hundred vocabulary items in the program.

Reading Adventures in Oz is a charming, attractive, and well-designed program. You really need an audio card to get the most out of it. (Davidson, Inc., PO Box 2961, Torrance, CA 90509. 310/793-0600)

MARIO IS MISSING!

Designed By: Jon Mandel
Programmed By: Jeff Chasen, Software Toolworks
Published By: Mindscape
For: MS-DOS (640K, 12MHz or faster CPU, VGA or Super VGA graphics, mouse recommended, supports most popular audio cards)
List Price: $59.95

The Mario Brothers are Nintendo's loveable little video game superstars, who have racked up forty million copies shipped and over $300 million in sales since 1985. Two-thirds of all American children between the ages of 9 and 12 are familiar with the Mario Brothers; which is better name recognition than George Bush or Bill Clinton could manage in this hard-to-please market.

Over a year ago, Nintendo reached an agreement allowing Software Toolworks to develop "edutainment" software based on the Mario Brothers characters. The first product of this alliance has now arrived: Mario Is Missing!

Your mission is to thwart the evil Bowser's horde of turtles, who have kidnapped Mario and now are stealing historic artifacts from the world's great cities (Can you say "Carmen Sandiego"?). By picking an unmarked door in Bowser's castle, you are teleported to one of twenty-five cities. You have to recover the lost items and return them to their rightful places. Complete enough missions and you can rescue Mario. You have a cellular phone to contact helpers, and a computer to store the information you collect. Keep a pencil and paper handy to record those all-important phone numbers!

Graphics and Animation: 9
Sound: 7
User Interface: 7
Overall Value: 7

You can also pick up locator beacons that help you track down the bad guys, and taxi tokens that allow you to get around town more quickly. You can also call up a very attractive world map that lets you zoom in on continents and regions. The package includes a colorful fold-out version of this map, with the game instructions printed on the back.

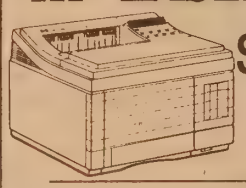
The city maps are limited to four or five locations, but they are in the right positions. For San Francisco, the missing items were the foghorn from the Golden Gate Bridge, a striped prison shirt from Alcatraz, the bell from a cable car, and the tip of the Transamerica Pyramid. Don't go out to Alcatraz without an extra taxi token, or you'll never get back.

Mario Is Missing! is installed from compressed files on five 3.5" disks (four were high-density) and occupies about 6.25MB of hard disk space. There are multiple levels of difficulty. (Software Toolworks Corp., 60 Leveroni Court, Novato, CA 94949. 415/883-3000)

Continued on page 135

SA COMPUTERS
NETWORK INSTALLATION
IN-HOUSE SOFTWARE DEVELOPMENT SPECIALISTS
MONTHLY SPECIALS

WINDOWS 3.1
+
DOS 5.0
+
MOUSE
FOR ONLY $89 (W/ANY SYSTEM PURCHASE)

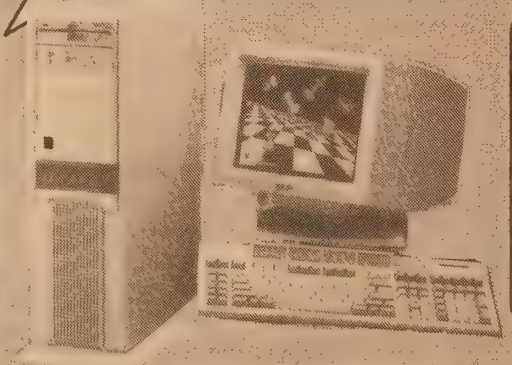
HP LASER JET 4

$1345
With Toner!

PANASONIC CD-ROM &
SOUND BLASTER PRO AUDIO CARD
PLUS:
SCSI Interface Card
INCLUDES:
5 Disc CD Software, US And World Atlas MPC, Chessmaster, Mavis Beacon, Great Cities
AS LOW AS $499
OVER 250 OTHER TITLES AVAILABLE!

386-40MHz
• 386-40MHz Motherboard w/64K Cache, AMI Bios
• 4MB RAM
• 1.2 & 1.44 Floppy Drives
• 120MB Hard Disk
• 2S/1P/1G
• 14" Super VGA Monitor.28, Non-Interlaced
• Super VGA (1MB) Card
• Mini Tower Case
• 101 Enhanced Keyboard
• Internal Clock/Calendar
$1125

BEST PRICES

486-33MHz
• 486-33MHz Motherboard w/256K Cache, AMI Bios
• 4MB RAM
• 1.2 & 1.44 Floppy Drives
• 200MB Hard Disk
• 2S/1P/1G
• 14" Super VGA Monitor .28, Non-Interlaced
• Super VGA (1MB) Card
• Mid-size Tower Case w/230W PS
• 101 Enhanced Keyboard
For 50MHz add $180
$1480



486-33MHz VESA Local Bus
• 486-33MHz VLB Motherboard w/256K Cache, AMI Bios
• 8MB RAM
• 1.2 & 1.44 Floppy Drives
• 200MB Hard Drive, w/32 Bit Disk Controller
• 2S/1P/1G
• 14" Super VGA Monitor .28, Non-Interlaced
• 32 Bit Orchid Fahrenheit VLB, Graphics Accelerator Card
• Mid-size Tower Case w/230W PS
• 101 Enhanced Keyboard
$1899

SA COMPUTERS
16882 Gothard St., Unit D
Huntington Beach, CA 92647
HOURS:
MON. - FRI. 10-6
PRICES REFLECT A CASH DISCOUNT ONLY
ADD 3% FOR CREDIT CARD PURCHASE
TEL: (714) 375-7433
FAX: (714) 375-7434
TERMS AND CONDITIONS: All SA Computers brand products carry a one year warranty, other brand products are warrantee by manufacturers. A 15 day money back guarantee for all products in original packaging Prices, specifications and availability subject to change without any notice.

MACRO Technologies

CONSULTING, SALES, SERVICE & REPAIRS
Financing Available

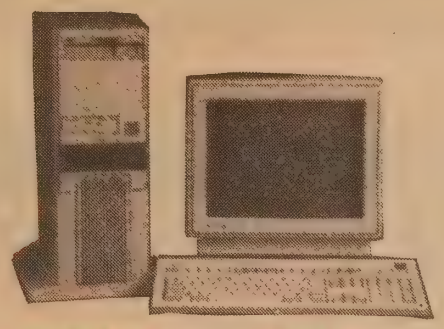
MACRO 486 LOCAL BUS

486DX2-66 LB ...$1299
486DX2-50 LB ...$1199
486DX-33 LB $1029

Local Bus 486DX M/B
256K High Speed Cache • 4MB Memory On Board Exp. Up To 32MB
TEAC 1.2M or 1.44M FDD • 1MB Local Bus VGA Card • 2 Serial/
1 Parallel/1 Game • Mid-Vertical Case • 230W Power Supply
Enhanced 101 Keys Keyboard

COLOR NOTEBOOKS AVAILABLE

Maxtor®
ViewSonic™
STEALTH VRAM



386SX-33.....$365
386SX-25.....$353
386DX-40.....$569
386DX-33.....$549

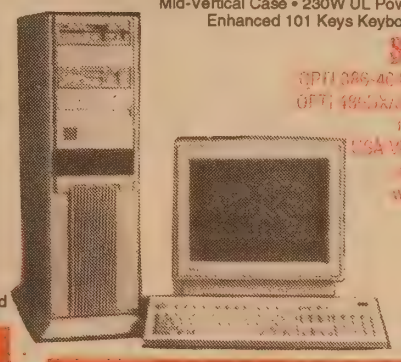
386SX-25/SX-33/DX-40/DX-33M/B
386SX-25/SX-33/DX-40/DX-33 CPU • 128K High Speed Cache
4MB Memory On Board Exp. Up To 32MB (1MB For 386SX)
TEAC 1.2M or 1.44M FDD • 2 Serial/1 Parallel/1 Game •
Mini-Vertical Case • 230W Power Supply • Enhanced 101 Keys Keyboard

MACRO 486 SERIES

486DX-66.....$1139
486DX-50.....$1069
486DX2-50.....$1029
486DX-33.....$879

486DX-66/DX-50/DX2-50/DX-33M/B
256K High Speed Cache (128K For 33MHz)
4MB Memory On Board Exp. Up To 64MB
TEAC 1.2M or 1.44M FDD • 2 Serial/1 Parallel/1 Game
Mid-Vertical Case • 230W UL Power Supply
Enhanced 101 Keys Keyboard

SPECIAL!!!
OPTI 386-40 Motherboard w/CPU...$119
OPTI 486SX/SX 128K Cache Motherboard
w/ CPU...$129
VGA VESA Local Bus 64bit
w/ 256K Cache
w/o CPU...$159



FLOPPY & HARD DISK DRIVES

IBM WDA-L42 42MB IDE (17ms)	$169
Maxtor MX-7040A 40MB IDE (17ms)	$182
Maxtor MX-7080A 80MB IDE HDD (17ms)	$269
Maxtor MX-7120A 120MB IDE HDD (15ms)	$299
Maxtor MX-7120S 120MB SCSI HDD (15ms)	$320
MaxtorMX-7213A 213MB IDE HDD (15ms)	$399
Maxtor MX-7213S 213MB SCSI HDD (15ms)	$499
Maxtor LXT-340A 340MB IDE HDD (13ms)	$620
Maxtor LXT-340S 340MB SCSI HDD (13ms)	$819
Maxtor XT-8380E 338MB ESDI HDD (13.5ms)	$1018
Maxtor XT-8380S 337MB SCSI HDD (13.5ms)	$1018
Maxtor XT-8760S 675MB SCSI HDD (16.5ms)	$1999
Maxtor PO-12 1.2GB SCSI HDD (13ms)	$1540
Quantum ELS42 & 42MB SCSI (21ms)	$189
Quantum LPS52AT 52MB IDE HDD (17ms, 64K Cache Buffer)	$227
Quantum LPS84AT 84MB IDE HDD (17ms, 64K Cache Buffer)	$293
Quantum LPS 12A012 120MB IDE HDD (17ms,256K Cache Buffer)	$345
Quantum LPS24A012 240MB IDE HDD (15ms, 256K Cache Buffer)	$599
Seagate ST-351AX 42MB IDE HDD (28ms)	$169
Conner CP-3000 40MB IDE HDD (29ms)	$174
Conner CP-30084 80MB IDE HDD (17ms)	$229
Conner CP-30104 120MB IDE HDD (17ms)	$299
Conner CP-3204F 210MB IDE HDD (16ms)	$439
Western Digital AC280 80MB IDE HDD (17ms)	$239
Western Digital AC2200 212MB IDE HDD (13ms)	$409
TEAC 1.2MB FDD (5.25")	$59
TEAC 1.44MB FDD (3.5")	$54
TEAC 2-1N-1 1.2/1.44MB FDD	$144
TEAC 2.88MB FDD (3.5")	$96
Panasonic 1.2MB FDD (5.25")	$59
Panasonic 1.44MB FDD (3.5")	$54
Sony 1.44 MB (3.5")	$52.99

ADD-ON BOARDS

Mono/Graphics/Printer Card	$15
TVGA-9000 VGA Card w/256K (Trident 9000 Chipset, Up To 512K)	$37
TVGA-8900C 1MB Super VGA Card (Trident 8900C Chipset)	$64
PVGA-1D Super VGA Card w/1MB (WD90C30 Chipset)	$123
PVGA-1DW Graphics Accelerator w/1MB & Hi-Color Chip (1280x1024)	$139
ATi VGA Wonder XL VGA Card (32,768 Colors, OEM Version)	$134
ATi Graphics Vantage 1MB VGA Card w/Mouse (OEM Package)-11 Times Faster Than Super VGA Cards, 1280x1024	$217
ATi Graphics Ultra 1MB (VRAM) VGA Card w/Mouse (OEM Package) -24 Times Faster Than Super VGA Cards, 1280x1024	$359
Diamond Speed Star-24X 1MB VGA Card (16 Million Colors)	$189
Diamond Stealth 1MB (VRAM) Window Accelerator w/Hi-Color Chip	$249
Orchid Pro-Designer IIs 1MB VGA Card w/Sierra RAMDAC (32,768 Colors)-70Hz Refresh Rate at 1024x768	$159
Orchid Pro-Designer IIs-E 1MB EISA VGA Card w/Sierra RAMDAC (32,768 Colors)-70Hz Refresh Rate at 1024x768	$192
Orchid Fahrenheit 1280 1MB (VRAM) Graphics Accelerator w/Sierra RAMDAC-32,768 Colors, 12 Times Faster Than Super VGA Cards, 1280x1024	$249
AT I/O (2Serial/1 Parallel/1 Game) Card	$14
Parallel(Printer)Card	$9
AT IDE Adapter (Dual Floppy & Hard Disk) w/Cable	$15
AT Super IDE IO Adapter (Dual Floppy & Hard Disk, 2S/1P/1G)	$24
UltraStor 12F-24 1:1 (24M Bit/s) ESDI Floppy/Hard Disk Controller	$159
UltraStor 12C ESDI Caching FD/HD Controller w/0MB (Up To 16MB)	$409
UltraStor 15C IDE Caching FD/HD Controller w/0MB (Up To 8MB)	$212
UltraStor 14F SCSI FD/HD Controller	$243
Future Domain 1670 16-Bit SCSI Floppy/Hard Disk Adapter Kit	$162
ADAPTEC AHA-1522BK SCSI Adapter Kit	$165
ADAPTEC AHA-1542B SCSI Floppy/Hard Disk Adapter(Card Only)	$238
ADAPTEC AHA-1542BK SCSI Bus Master Host Adapter Kit	$275
ADAPTEC AHA-1742BK EISA SCSI Bus Master Adapter Kit	$469
NE 216 NE2000 16 Bit CX Compatible Card	$87
NE 208 NE1000 8 Bit CX Compatible Card	$85

SYSTEM BOARDS

OPTI Baby 486DX-50MHz EISA M/B w/256K Cache	$999
OPTI Baby 486DX-50MHz M/B w/256K Cache (Write-Back Cache)	$760
OPTI Baby 486DX2-50MHz M/B w/256K Cache (Write-Back Cache)	$690
OPTI Baby 486DX-33MHz EISA Local Bus M/B w/256K Cache	$799
OPTI Baby 486DX-33MHz Local Bus M/B w/128K Cache	$619
- w/Tseng Lab ET-4000 1MB Local Bus Card	+$149
OPTI Baby 486DX-33MHz M/B,w/128K Cache (Write-Back Cache)	$530
OPTI Baby 386DX-40MHz M/B w/128K Cache(Write-Back Cache)	$219
OPTI Baby 386DX-33MHz M/B w/128K Cache	$194
OPTI 386SX-33MHz M/B	$129
UMC Baby 486DX-50MHz M/B w/256K Cache (Write-Back Cache)	$799
UMC Baby 486DX2-50MHz M/B w/256K Cache (Write-Back Cache)	$699
UMC Baby 486DX-33MHz M/B w/64K Cache (Write-Back Cache)	$569
UMC Baby 386DX-40MHz M/B w/64K Cache (Write-Back Cache)	$229
UMC Baby 386DX-33MHz M/B w/64K Cache	$215
VEGA Baby 486DX-50MHz M/B w/256K Cache (USA Made)	$799
VEGA Baby 486DX2-50MHz M/B w/256K Cache (USA Made)	$699
VEGA Baby 486DX-33MHz M/B w/64K Cache (USA Made)	$599
VLSI Mini 386SX-25MHz M/B	$128
C&T Mini 386SX-25MHz M/B	$124
***256K Cache Upgrade From 64K For All 486 And 386 M/B	$40

KEYBOARDS

Focus-2001 101 Keys Keyboard w/Hard Dustcover (Click)	$43
Focus-6000 101 Keys Keyboard (Soft Click)	$37
Focus-8000 111 Keys Keyboard (Calculator, Soft Click)	$45
Focus-9000 128 Keys Keyboard (Programmable, Same As 5001 K/B)	$71
Fujitsu-4700 101 Keys Keyboard	$46
Keytronics KT-2000 101 Keys Keyboard	$43
BTC 101 Keys Keyboard	$26

MONITORS

CTX5439A 14" Super VGA Color Monitor (1024x768, .39dp)	$239
CTX5468A 14" Super VGA (TriScan) Color Monitor (1024x768,.28dp)	$288
CTX5468NI 14" Non-Interlaced Color Monitor (1024x768,.28dp)	$319
CTX1760 17" Flat-Screen Multi-Freq. Monitor (1280x1024,.28dp)	$1033
ViewSonic 4E 14" Super VGA Color Monitor (1024x768,.28dp)	$316
ViewSonic 6 14" Non-Interlaced Color Monitor (1024x768,.28dp)	$357
ViewSonic 6E 14" Non-Interlaced Color Monitor (1024x768,.28dp)	$348
ViewSonic 5E 14" Non-Interlaced Color Monitor (1024x768,.28dp 72Hz Refresh Rate at 1024x768)	$418
ViewSonic 6FS 15" Multi-Frequency Color Monitor (Flat-Screen, Low Radiation, 1280x1024,.28dp 72Hz Refresh Rate at 1024x768)	$620
ViewSonic 7 17" Multi-Frequency Color Monitor (Digital Auto-Tracking Flat-Screen, Low Radiation, 1280x1024,.28dp)	$1039
ViewSonic 8 20" Multi-Frequency Color Monitor (Digital Auto-Tracking Low Radiation, 1280x1024,.31dp)	$1643
Sony CPD-1304 14" MultiScan Monitor (Non-Interlaced, .25dp)	$596
Sony CPD-1604S 17" MultiScan Monitor (Non-Interlaced,.25dp)	$1118
NEC MultiSync 3FGx 15" Color Monitor (1024x768,.28dp)	$668
NEC MultiSync 4FG 15" Color Monitor (AccuColor & Digital Controls 1024x768,.28dp)	$778
NEC MultiSync 5FG 17" Color Monitor (AccuColor & Digital Controls 1280x1024,.28dp)	$1478
NEC MultiSync 6FG 21" Color Monitor (AccuColor & Digital Controls1280x1024,.28dp)	$2590
Micro 12" Amber Monitor	$86
Micro 14" Paper-White Monitor	$106
Micro 14" Paper-White Mono VGA Monitor	$126
Micro 14" VGA Color Monitor (640x480,.41dp)	$240

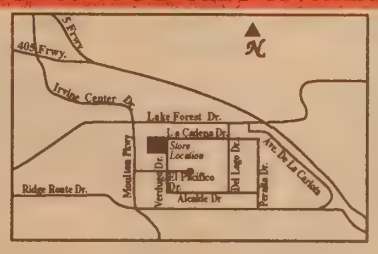
CHASSIS

MTC 959 Baby AT w/230W UL Power Supply (3x5.25", 2x3.5" Digital)	$79
MTC D2 Baby AT w/230W Power Supply (3x5.25", 1x3.5")	$69
MTC 121D Mini-Tower w/230W Power Supply (2x5.25", 3x3.5" Digital)	$69
MTC 121ND Mini-Tower w/230W Power Supply (2x5.25', 3x3.5")	$66
MTC 122 Mid-Tower w/230W Power Supply (2x5.25", 3x3.5" Digital)	$89
MTC 123 Full-Size Tower w/230W UL Power Supply (6FDD/HDD Digital)	$119
Diamond Series:(Black Color Model Available+$3.00)	
MTC -130 Full Vertical Case w/250W UL Power Supply (4x5.25', 2HD, Digital)	$149
MTC-230 Mid Vertical Case w/250W UL Power Supply (4x5.25", 2HD, Digital)	$139
MTC-330 Mini Vertical Case w/220W UL Power Supply (2x5.25", 3x3.5", Digital)	$89
MTC-530 Desktop Case w/250W UL Power Supply (2x5.25", 2x3.5", 2HD, Digital)	$103
MTC-730 Baby AT Case w/250W UL Power Supply (2x5.25",1x3.5",1HD, Digital)	$94

MISCELLANEOUS

CD-ROM Panasonic IDE w/AT Bus Ctrl	$342
CD-ROM Panasonic SCSI w/TMC 850 Ctrl w/Driver	$459
***CD Package-Illustrated Encyclopedia, National Geographics, Reference Library, US Atlas/World Atlas, CD Game Pack II	$123
Sound Blaster Pro	$199
Logitech Dexxa Mouse	$27
Logitech Bus Mouse Man	$69
MicroSoft Serial Mouse	$88
A4 Tech Serial Mouse	$19
A4 Tech Trackball	$39
F2 Black Serial Mouse	$29
Z-Nix Super Mouse	$20
Z-Nix Super Mouse w/MicroSoft Windows 3.1	$64
Smart-Link Internal 2400 Baud Data Modem	$43
Smart-Link External 2400 Baud Data Modem	$41
Smart-Link Internal 9600/2400 Send/Receive Fax/Data Modem	$69
U.S. Robotics Sportster 2400 PC Internal Data Modem	$126
Colorado Memory System DJ-10120MB Tape Backup System	$204
Colorado Memory System DJ-20250MB Tape Backup System	$259
Colorado Memory System AB-11 External Adapter Kit	$38
Colorado Memory System KE-09 External Drive Kit	$83
Colorado Memory System FC-10500Kb/s-1MB/s Adapter Kit	$88
Colorado Memory System TC-15 Data Compression Adapter Kit	$187
Archive 250MB Tape Back-Up System w/Software	$221
Cyrix 83X87-25/IIT 3C87SX-25 Math Coprocessor	$82
Cyrix 83D87-25/IIT 3C87DX-25 Math Coprocessor	$85
Cyrix 83D87-33/IIT 3C87DX-33 Math Coprocessor	$95
Cyrix 83D87-40/IIT 3C87DX-40 Math Coprocessor	$105

MEMORY MODULES AVAILABLE!



CALL FOR DEALER PRICES!

Terms & Conditions: All purchased systems carry a ONE YEAR LIMITED WARRANTY except monitors and printers which are warranty by manufacturers. All sales on Monitors, Printers and Hard Disk Drives are final, NO REFUND. All returns are subjected to our approval and must have prior authorization. Return items must be in their original condition, send shipping prepaid. All refunds or credits are less shipping and bank charges. All refund items must be returned within 14 days of invoice. There will be a 20% restocking fee after the 7 days period and within 30 days of invoice. Thereafter, only exchanges are available during the rest of the warranty period. Price, Specification & Availability subject to change without any notice. All prices subject to change without notice.

BUSINESS HOURS:
M-F 9am-6pm

MACRO Technologies
23151 Verdugo, Suite 102 • Laguna Hills, CA 92653
TEL: (714)580•1822• FAX: (714) 770•4950
TECHNICAL SUPPORT: (714) 859-1014

MasterCard
VISA

PASADENA COMPUTER

PASADENA

Your Be

486DX-33MHz

- INTEL 80486 PROCESSOR WITH BUILT-IN MATH
- 256K CACHE RAM
- 170MB HD, 13MS
- 4MB RAM UP TO 32MB RAM ON BOARD
- 1.2MB & 1.44MB FLOPPY DRIVE
- DUAL IDE FD/HD CONTROLLER
- AT I/O: 2 SERIAL/1 PARALLEL/1 GAME
- 16 BIT SVGA CARD W/1 MB RAM
- 14" 1024 X 768 0.28 DOT SVGA MONITOR
- 101 ENHANCED KEYBOARD

SALE PRICE: $1445

CASH DISCOUNT: **$1375**

486SX-25MHz

(30% FASTER THAN 386)

- 64K CACHE RAM
- 4MB RAM UP TO 32MB RAM ON BOARD
- 1.2MB & 1.44MB FLOPPY DRIVE
- 125MB HD, 17MS (BUILT-IN 32K CACHE)
- DUAL IDE FD/HD CONTROLLER
- AT I/O: 2 SERIAL/1 PARALLEL/1 GAME
- 16 BIT SUPER VGA CARD W/1MB RAM
- 14" 1024 x 768 0.28 DOT SVGA MONITOR
- 101 ENHANCED KEYBOARD

SALE PRICE: $1176

CASH DISCOUNT: **$1095**

386DX-40MHz

- 128K CACHE RAM
- 4MB RAM UP TO 32MB RAM ON BOARD
- 1.2MB & 1.44MB FLOPPY DRIVE
- 125MB HD, 17MS (BUILT-IN 32K CACHE)
- DUAL IDE FD/HD CONTROLLER
- AT I/O: 2 SERIAL/1 PARALLEL/1 GAME
- 16 BIT SUPER VGA CARD W/1MB RAM
- 14" 1024 x 768 0.28 DOT SVGA MONITOR
- 101 ENHANCED KEYBOARD

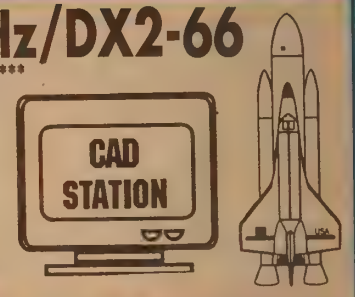
SALE PRICE: $1045

CASH DISCOUNT: **$995**

EISA 486DX-33/DX-50MHz/DX2-66

*** 486DX + EISA = TURBO COMPUTER ***

- INTEL 80486 PROCESSOR WITH BUILT-IN MATH
- 256K CACHE RAM
- 4MB RAM UP TO 32 MB RAM ON BOARD
- 1.2MB & 1.44MB FLOPPY DRIVE
- DUAL IDE FD/HD CONTROLLER CARD
- AT I/O: 2 SERIAL/1 PARALLEL/1 GAME
- 101 KEYBOARD
- 170 MB HD, 13MS
- 32 BIT ORCHID EISA SVGA CARD 1280 X 1024 W/1MB
- 15" 1280 x 1024 SVGA MONITOR, FLAT SCREEN

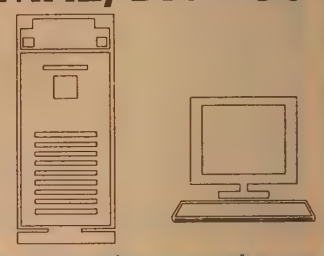


SALE PRICE: $2095/$2305/$2457

CASH DISCOUNT: **$1995/$2195/$2340**

LOCAL BUS 486DX-33/DX-50MHz/DX2-66 VESA

- INTEL 80486 PROCESSOR WITH BUILT-IN MATH
- 256K CACHE RAM
- 4MB RAM UP TO 32MB RAM ON BOARD
- 1.2MB & 1.44MB FLOPPY DRIVE
- DUAL FD/HD CONTROLLER CARD
- AT I/O: 2 SERIAL/PARALLEL/ GAME PORT
- 101 KEYBOARD
- 170MB HD, 13MS
- 32 BIT LOCAL BUS SVGA CARD 1280 X 1024 W/1MB
- 14" 1024 x 768 0.28 DOT SVGA MONITOR



SALE PRICE: $1570/$1780/$1932

CASH DISCOUNT: **$1495/$1695/$1840**

486DX-50MHz/DX2-66MHz (25% FASTER THAN 486DX-50)

- INTEL 80486 PROCESSOR WITH MATH
- 256K CACHE RAM
- 4MB RAM UP TO 32 MB
- 1.2MB & 1.44MB FLOPPY DRIVE
- 170MB HD, 13MS
- DUAL IDE FD/HD CONTROLLER
- AT I/O: 2 SERIAL/1 PARALLEL/1 GAME
- 16 BIT SVGA CARD W/1 MB RAM
- 14" 1024 X 768 0.28 DOT SVGA MONITOR
- 101 ENHANCED KEYBOARD

SALE PRICE: $1630/$1780

CASH DISCOUNT: **$1550/$1695**

Canon

BUBBLE JET
BJ-10EX PORTABLE
INKJET PRINTER
PLAIN PAPER PORTABLE PRINTER!

- 83 CHARACTERS/SECOND
- 360 DPI - LIGHTWEIGHT 4 LBS.
- UP TO 30 SHEETS
- 45 DBA - IT'S QUIET!
- EPSON EMULATION
- LETTER QUALITY TEXT & GRAPHICS

$245

Canon

BUBBLE JET
BJ-200
NEW
INKJET PRINTER
LASER QUALITY

- MANUAL FEED & SHEET FED
- 248 CHARACTERS/SECOND
- 360 DPI > 6.6 LBS.
- 100 SHEETS OR 10 ENVELOPES
- 42 DBA - IT'S QUIET!
- EPSON & IBM EMULATION

$339

Canon

BUBBLE JET
BJ-300*/330
INKJET PRINTER
LASER QUALITY

- MANUAL FEED & SHEET FED
- 300 CHARACTERS/SECOND
- 360 DPI > 15.2 LBS./19.4 LBS.
- ANY SIZE PAPER (ENVELOPE, A4 LEGAL, SINGLE SHEET, TRANSPARENCIES)
- EPSON & IBM EMULATION

$339/$615

*Limited Quantity
INK CARTRIDGE $25 EA.

Canon

COLOR BUBBLE JET
BJC-800/820
COLOR INKJET PRINTER

- MULTI-PURPOSE AUTOMATIC SHEET FEEDER
- 300 CHARACTERS/SECOND
- 360 DPI >22 LBS.
- 4 INDIVIDUAL COLOR INK CARTRIDGE
- EPSON & IBM EMULATION
- LASER QUALITY TEXT & GRAPHICS

$1795/$1955

Pasadena Computer proudly distributes the latest technology in computers and networking solutions. We offer only quality products along with quality service for Consultants, Schools and all businesses. Combine that with the most competitive prices around and you have an unbeatable combination. See for yourself with some of our services: • One Year Parts Warranty • Lifetime Labor Warranty • Lifetime Technical Support • Free Estimates • 72 Hours Burned-in Test • Major Brand Authorized Reseller for: AST, ALR, CANON, EPSON, KODAK, PANASONIC, HP, NOVELL, VIEWSONIC... • We accept School & Government PO's • Customer Configurations Welcome • On-Site Service Available (Optional)

COMPUTER Choice

CALL FOR PRICES
WE BEAT ANY PRICE
ADVERTISED IN MICROTIMES

PASADENA COMPUTER

NOTEBOOK SPECIALS

Student PC
386SX-25MHz

International Warranty - Over 30 Countries

- 2MB RAM
- 60 MB HARD DISK
- 1.44MB FLOPPY DRIVE
- 3 I/O PORTS: VGA, RS-232, PRINTER
- 4.7 LBS. W/BATTERY
- ADVANCED POWER MANAGEMENT
  - CPU DOWN SHIFT MODE
  - CPU STANDBY MODE
  - I/O STANDBY MODE
  - GLOBAL STANDBY MODE
  - SUSPEND MODE
- BUNDLED SOFTWARE
  - DR-DOS 6.0
  - BCAL (POP-UP CALCULATOR)
  - GFACE (FONT SOFTWARE)
  - IQ TEST (GAME SOFTWARE)
  - TIME WATCHER (WORLD TIME CLOCK)

SALE PRICE: $1110
CASH DISCOUNT:
$1050

Engineer PC
486DX-33MHz

- BUILT-IN MATH COPROCESSOR
- BUILT-IN 8K CACHE
- 4MB RAM UP TO 16 MB
- 170 MB HARD DRIVE, 15MS (32K CACHE)
- BACKLIT 9" VGA SCREEN
- 3.5" 1.44 MB FLOPPY DRIVE
- EXTRA NUMERIC KEYPAD
- 2 SERIAL/ 1 PARALLEL PORT
- EXTER. VGA MONITOR PORT
- EXTER. KEYBOARD PORT
- AC/DC ADAPTOR
- CARRYING BAG
- WEIGHT 7 LBS

SALE PRICE: $2095
CASH DISCOUNT:
$1995

Manager's PC
486SLC-25MHz

International Warranty - Over 30 Countries

- 9600 FAX/2400 MODEM
- 10.5" VGA DISPLAY
- 4MB RAM
- 80MB HARD DISK
- 1.44MB FLOPPY DRIVE
- 3 I/O PORTS: VGA, RS-232, PRINTER
- 4.7 LBS. W/BATTERY
- ADVANCED POWER MANAGEMENT
  - CPU DOWN SHIFT MODE
  - CPU STANDBY MODE
  - I/O STANDBY MODE
  - GLOBAL STANDBY MODE
  - SUSPEND MODE
- BUNDLED SOFTWARE
  - DR-DOS 6.0
  - BCAL (POP-UP CALCULATOR)
  - GFACE (FONT SOFTWARE)
  - IQ TEST (GAME SOFTWARE)
  - TIME WATCHER (WORLD TIME CLOCK)

SALE PRICE: $1570
CASH DISCOUNT:
$1495

COLOR NOTEBOOK
486SLC-25

- COLOR 9" PASSIVE VGA
- BUILT-IN TRACKBALL
- LIGHTWEIGHT 5.7 LBS.
- 4MB RAM UP TO 8MB
- 120MB HD, 16MS (32K CACHE)
- 3.5" 1.44MB FLOPPY DRIVE
- 2 SERIAL, 1 PARALLEL PORT
- EXTER. VGA MONITOR PORT
- EXTER. KEYBOARD PORT
- AC/DC ADAPTOR
- CARRYING BAG

SALE PRICE: $2515
CASH DISCOUNT:
$2395

CAD STATION
486DX2-50MHz

- BUILT-IN MATH COPROCESSOR
- BUILT-IN 8K CACHE
- 4MB RAM UP TO 16MB
- 170 MB HD, 15MS (64K CACHE)
- BACKLIT 9" VGA SCREEN
- 3.5" 1.44 MB FLOPPY DRIVE
- EXTRA NUMERIC KEYPAD
- 2 SERIAL/ 1 PARALLEL PORT
- EXTER. VGA MONITOR PORT
- EXTER. KEYBOARD PORT
- AC/DC ADAPTOR
- CARRYING BAG
- WEIGHT 7 LBS

SALE PRICE: $2365
CASH DISCOUNT:
$2250

MONITOR

	Regular/Cash
PRESENTA 20"	$1055/999
VIEWSONIC 7E 17"	$1080/1040
VIEWSONIC 5E	$420/400
VIEWSONIC 6E	$350/335
CTX 14" 1024 X 768 0.28 DOTS (I)	$263/255
CTX 14" 1024 X 768 0.28 DOTS (NI)	$299/290
KFC 17" 1280 x 1024 0.26 DOTS	$840/799
KFC 15" 1280 X 1024 SVGA	$465/445
14" 1024 X 768 0.28 DOT SVGA	$250/240
14" 1024 X 768 0.28 DOT SVGA (NI)	$285/275

ADD-ON BOARD

OAK SVGA 1MB	$61/59
OAK SVGA 512K	$45/44
VGA 256K	$33/32
ATI WONDER XL (OEM) 1MB	$135/130
ATI GRAPHIC ULTRA 1MB	$345/335
ORCHID FAHRENHEIT 1280 1 MB	$200/195
AT I/O 2S / 1P / 1G	$21/20
IDE W/IO 2S / 1P / 1G	$21/20
PRINTER CARD	$11/10
IDE CARD	$16/15
2400 BPS INTERNAL MODEM	$41/40
9600 FAX/2400 MODEM	$62/59
14400 FAX MODEM (EXTERNAL)	$345/325

KEYBOARD & MICE

MONTEREY 101 KEY	$24/23
MAXI SWITCH 101 KEY	$36/35
FOCUS 2001	$44/42
FUJITSU 4700 101 KEY	$47/45
MOUSE (1000 DPI)	$13/12
TRUE TRACK BALL	$26/25
MICROSOFT DOS 5.0	$46/45
WINDOWS 3.1 (OEM) W/MOUSE	$50/49
600 DPI COLOR FLAT BRD SCANNER	$998/950

MOTHER BOARD

386SX-25 W/CPU	$134/130
386DX-40 64K CACHE W/CPU	$227/220
486SX-25 64K CACHE	$142/135
486DX-33 256K CACHE	$166/158
486DX-33 256K CACHE W/LOCAL BUS	$216/210
486DX2-50 256K CACHE	$170/162
486DX2-50 256K CACHE W/ LOCAL BUS	$247/240
486DX-50 256K CACHE	$185/175
486DX-50 256K CACHE W/ LOCAL BUS	$280/270
486DX-33 256K CACHE EISA BUS	$415/395
486DX-50 256K CACHE EISA BUS	$420/405
486DX2-66 256K CACHE	$190/180

PLEASE CALL FOR PRICING ON CPU, MEMORY AND HARD DRIVE

NETWORK SPECIAL

SERVICER: (1 USER)
* 486-33MHz, 256K CACHE
* 4MB RAM
* 212MB HARD DISK (15MS)
* 1.2 & 1.44MB FLOPPY DRIVE
* 14" MONO MONITOR
* 16 BIT ETHERNET CARD
* MIDDLE TOWER CASE
* 230W POWER SUPPLY

STATIONS: (4 USERS)
* 386SX-25MHz
* 1MB RAM
* 1.2MB (OR 1.44MB) FLOPPY DRIVE
* 14" 1024 X 768 SVGA MONITOR
* 16 BIT ETHERNET CARD
* MINI TOWER CASE
* 200W POWER SUPPLY

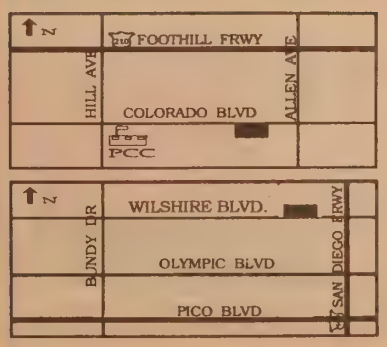
NOVELL
AUTHORIZED
DEALER

SALE PRICE: $4940 CASH DISCOUNT: $4795

INCLUDING: NOVELL NETWARE V3.11 (5 USERS)
WE HAVE TWO CNE TO SERVICE ALL YOUR NETWORK NEEDS

ADDITIONAL PARTS

* 16 BIT ETHERNET CARD	$105	* 8 BIT ETHERNET CARD	$50	* 12 PORT CONCENTRATOR	$525
* 8 BIT ETHERNET CARD	$95	* 16 BIT 10 BASE-T ETHERNET CARD	$125	* 400W UPS W/MONITOR CARD	$450
* 16 BIT ARCNET CARD	$70	* NOVELL V3.11 (5 USERS)	$CALL		



BUSINESS HOURS:
MONDAY-FRIDAY 9:00-6:00
SATURDAY 10:00-6:00

PASADENA MAIN OFFICE
1756 E. Colorado Blvd.
Pasadena, CA 91106
Tel: (818) 568-9133
Fax: (818) 568-9132

West LA Branch:
11841 Wilshire Blvd.
LA, CA 90025
Tel: (310) 575-4028
Fax: (310) 575-3831

ALL PRICES AND PRODUCTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE

FLOPPIES ♦ HARD DRIVES ♦ CD ROMS

- Teac 1.2/1.44/2.88/Combo 1.2 &1.44MB ..... $55/[illegible]
- Conner 40/80/120/170/210MB IDE $145/200/240/270/360
- Conner 520MB SCSI/IDE $870/870
- Maxtor 80/120/210/340/535MB IDE $200/240/360/540/860
- Maxtor 80/120/210/340/535MB SCSI ..... NA/[illegible]
- Western Digital 80/120/209/340MB IDE $185/220/330/560
- Maxtor 676/1029/1470MB SCSI $1150/1450/1620
- Fujitsu 513/1.2GB/1.6GB/2.0GB SCSI $950/1340/2200/2400
- Colorado Tape Backup Internal 120/250MB $190/240
- Colorado External Adapter Kit $40
- Sony CD ROM w/CPU-31A/535 Drive w/Interface $265/315
- Mitsumi LU 005S CD ROM w/Interface $230
- Multimedia Game Kit/Sony CD Software $110/100
- Panasonic Multimedia Kit (w/Sound Pro +7 Titles) $520

SOUND CARDS ♦ MONITORS ♦ MISCELLANEOUS

- Sound Blaster Pro/Pro Basic/Basic $195/160/85
- Sound Commander Pro/Ex Basic/Basic $135/85/70
- Sound Magic/Media Music 2.0 ..... $85/60
- Speakers w/Amplifier (Pair) $28
- ViewSonic 4E/5E/5+/6E $300/415/495/328
- ViewSonic 6FS/7/8 ..... $575/995/1590
- Shamrock 14" SVGA Interlaced/N-I $255/295
- Amazing 14" SVGA .28 Interlaced/N-I $260/300
- Arcus 15" 1280x1024/14" Interlaced/1468 VESA N I $420/280/320
- Modem Internal 1200/2400/9600 ..... $15/40 /205
- Send & Receive Fax/Modem 96/24/1.44/96 ..... $60/260
- Memory 1MBx9 (9 Chip) 60/70ns ..... $34/3[illegible]
- Memory 1MBx9 (3 Chip) 60/70ns $30/28

PERIPHERALS

♦ CONTROLLERS ♦

- Adaptec 1522 SCSI Compatible (Board Only) $99
- Adaptec 1522K AT SCSI Host Adapter w/Software & Drive Kit $150
- Adaptec 1542K 16 Bit ISA SCSI Host Adapter w/Bus Master (Board) $215
- Adaptec 1542BK SCSI Bus Master Host Adapter Kit $255
- Adaptec 1542BK-Plus SCSI Bus Master Kit w/CD ROM & Tape Backup $300
- Adaptec 1640K 32 Bit SCSI Channel, Micro Channel Host Adapter $320
- Adaptec 1740 32 Bit EISA SCSI, Host Adapter (Board Only) $460
- Adaptec 1740K 32 Bit EISA SCSI Master Kit, Host Adapter $480
- Adaptec 1742A EISA SCSI Host Adapter (Board Only) $370
- Adaptec 1742AK EISA SCSI Master Kit, Host Adapter $430

(All Adaptec Kits Include DOS/OS2 And Novell Drives, Cable & Installation Guide)

♦ VIDEO ♦

- MGP $15
- VGA 256K Realtek 16 Bit. $30
- VGA 512K Realtek 16 Bit $45
- VGA 1MB Realtek 16 Bit $55
- Trident SVGA 1MB 16 Bit $58
- Accumos SVGA 1MB (16M Colors) $85
- Paradise 1MB SVGA Card $78
- MGP/CGA Card $18
- Paradise VGA Windows Accelerator 1280x1240 32K Colors $140
- ATI VGA Basic 16 Bit 640x480 16 Colors $70
- ATI Wonder XL256 16 Bit 1024x768 FREE Mouse/512/1MB $100/120/150
- ATI 8514 Ultra 512/1MB 16 Bit Micro Channel $330/360
- ATI Graphic Vantage 512/1MB 16 Bit Accelerator $250/290
- ATI Graphic Ultra 1280x1024 Resolution,1MB w/Mouse $280
- ATI Ultra Plus 1280x1024 2MB DRAM $330
- ATI Ultra Pro 1280x1024 2MB VRAM Non-Interlaced $430
- Diamond Speedstar 1MB 72Hz ET 4000 ..... $125
- Diamond Speedstar 24x 16 Million Colors VESA Standard 72Hz $175
- Diamond Stealth VRAM 1MB VESA Standard 1280x1024 ..... $225
- Orchid Fahrenheit ISA S3 24 Bit 16M Colors Windows Accelerator $180
- Orchid Fahrenheit VA ISA S3 w/Voice Annotation 1280x1024 ..... $220
- Orchid Fahrenheit VA/VESA Local Bus 32 Bit w/Voice Annotation $240
- Orchid Fahrenheit VESA Local Bus w/53 Chipset $210
- Orchid Pro Design IIS EISA 32 Bit 1MB w/Sierra RAM DAC $165
- Orchid Pro Design IIS 1MB VGA w/Sierra RAM DAC $140

CALL FOR OTHERS!

INTRODUCING MESA 486DX SERIES

SUPER ISA 386SX SERIES

- Mini Vertical Case w/200W P/S
- AMI Bios w/02MB Memory Installed
- Clock Calendar w/Battery Backup
- Dual IDE FD/HD Controller w/Cable
- Dual High Density 1.2 5 1/4" & 1.44 3 1/2" Floppies
- 42MB IDE Hard Disk Drive
- SVGA Card w/512K Memory (1MB Exp.)
- 14" VGA Monitor Color
- AT 2 Serial/Parallel/Game Ports
- 101 Keys Enhnaced Keyboard
- MS DOS 5.0 & Windows 3.1 (Optional)
- Fully Tested & Burned

386SX/40MHz $760
386SX/33MHz $725
386SX/25MHz $715
386SX/16MHz $690

SUPER ISA 386DX SERIES

- Mini Vertical Case w/200W P/S
- AMI Bios w/02MB Memory Installed
- Clock Calendar w/Battery Backup
- Dual IDE FD/HD Controller w/Cable
- Dual High Density 1.2 & 1.44 Floppies
- 85MB 18ms IDE Hard Drive
- SVGA 1MB Video Card & 64K Cache
- 14" SVGA Monitor Color
- AT 2 Serial/Parallel/Game Ports
- 101 Keys Enhanced Keyboard
- MS DOS 5.0 & Windows 3.1 (Optional)
- Fully Tested & Burned

386DX/25MHz $890
386DX/33MHz $920
386DX/40MHz(64K) $940
386DX/40MHz(128K) $960

INTRODUCING ORCHID LOCAL BUS SERIES

ORCHID

for VESA Local Bus Superboard 486VLB is the second generation of local bus motherboards from Orchid Technology. This one is equipped with two VESA Local Bus slots to get the maximum performance from your VESA-compliant peripherals and six 16-bit ISA expansion slots.

- Orchid New VESA Local Bus Superboard Made In U.S.A.
- 256KB Fast Speed Cache RAM & 4MB 60ns System Board Memory
- Dual 1.2 & 1.44 Floppies & Fast 210MB 14ms Cache Hard Disk
- VESA Local Bus IDE Controller & AT
- 2 Serial/Parallel/Game Ports
- Orchid Fahenheit VESA Local Bus Windows
- Accelerator w/Voice Annotation, Video Card (w/Software & Microphone)
- The Fahrenheit VA Uses S3 68C801 Graphics
- Processor & Draw
- Super Non-Interlaced ViewSonic 14" Monitor (1024x789 Res.)
- Deluxe Full Size Vertical Case w/250W P/S
- Extra Cooling Fan & Deluxe 101 Keys .
- Enhanced Keyboard
- Microsoft Compatible Mouse w/3 Buttons Functions
- MS DOS 5.0 & Windows 3.1 (Optional)

486DX2/66MHz $2500
486DX/50MHz $2430
486DX/33MHz $2300

MESA HI-COLORS SYSTEM SERIES

- 4MB Memory 70ns RAM 64K Cache
- 125MB 15ms Hard Disk Caching
- Dual 1.2 & 1.44MB Floppies
- 16 Bit SVGA N-I 16 Million Colors Card
- 14" SVGA Non-Interlaced Monitor
- AT 2 Seriel/Parallel/Game Ports
- IDE FD/HD Controller & Mouse
- Enhanced 101 Keys Keyboard
- MS DOS 5.0 & Windows 3.1 (Optional)
- Choice Of Desktop Or Vertical Mini Case
- Fully Tested & Burned

386/40MHz $1175
486SX/25MHz $1240
486DLC/33MHz $1340
486DX/33MHz $1490
486DX/50MHz $1670
486DX/66MHz $1700

MESA VESA LOCAL BUS SYSTEM SERIES

- 8MB Memory 60ns RAM 256K Cache
- 170MB IDE Caching Hard Disk
- Dual 1.2 & 1.44MB Floppies
- 32 Bit Orchid Fahrenheit VESA Local Bus w/5386C803 & Voice Annotation
- 14" SVGA Non-Interlaced ViewSonic .28
- AT I/O Controller 2 Serial/Parallel/Game Port
- 32 Bit IDE FD/HD Controller
- Enhanced 101 Keys Deluxe Keyboard
- Deluxe Full Size Case w/Extra Fan
- Fully Tested & Burned

486DX/33MHz $1990
486DX/50MHz $2170
486DX2/66MHz $2200

ISA 486

STANDARD

- INTEL 486DX CPU
- 64K Cache w/4MB 70ns Memory
- AMI Bios w/Set-up Built-in
- Dual 1.2 & 1.44MB Floppies
- 170MB 15ms Cache IDE Hard Drive
- 16 Bit SVGA 1MB Video Card
- 14" VGA Non-Interlaced Monitor
- AT 2 Seriel/Parallel/Game
- 101 Keys Enhanced Keyboard
- Logitech Serial Mouse
- MS DOS 5.0 & Windows 3.1 (Optional)
- Mid Size Case w/230W P/S
- Burned & Tested Prior To Shipment

486DX2/66MHz $1595
486DX/50MHz $1575
486DX/33MHz $1395

LOCAL BUS

- Intel 486DX CPU
- 64K Cache w/4MB 70ns Memory
- AMI Bios w/Set-up Built-in
- Dual 1.2 & 1.44MB Floppies
- 210MB 15ms Cache IDE Hard Drive
- ET 4000 VESA Local Bus Video Card
- 14" VGA Non-Interlaced Monitor
- AT 2 Serial/Parallel/Game
- 101 Keys Enhanced Keyboard
- Logitech Serial Mouse
- MS DOS 5.0 & Windows 3.1 (Optional)
- Mid Size Case w/230W P/S
- Burned & Tested Prior To Shipment

486DX2/66MHz $1790
486DX/50MHz $1770
486DX/33MHz $1590

ORDER TODAY! CALL TOLL FREE!!

1 ▪ 800 ▪ 929 ▪ MESA

TERMS & CONDITIONS OF SALE:

For System: 1 Year Parts, 3 Year Labor Warranty
Parts Only: 1 Year Limited Warranty
Memory & CPU: 30 Days, No Refund
Monitor & Printer: Warranty By Manufacturer
Refund w/in 10 Days By Invoice Date
All Prices Reflect Cash Discount &
Subject To Change w/out Notice
FINANCING...CALL!

When Everyone Else Is Trying To Cut Prices By Giving You Less... It's Nice To Know Someone Is Cutting Prices While Still Giving You The Same...

SAME QUALITY BETTER PRICE ♦ GUARANTEED

Sales Information: 714/650-0633
Technical Support: 714/650-0712
Shipping Information: 714/650-0686
Fax: 714/650-6371

BUSINESS SYSTEM

- More Features At A Lower Cost Than Any Other 486DX System
- We Use Only Top-Quality Components
- Every System Is Indvidually Pre-Tested And Burned-in For 48Hrs. Prior To Shipment And Delivery
- As Long As You Own Your System, You Get **FREE,** Unlimited Technical Support

ONLY $25/MONTH... PURCHASE UP TO $900!

10 YEARS EXPERIENCED STAFF
MEMBER OF USA CHAMBER OF COMMERCE
MEMBER OF NFIB

MESA COMPUTER, INC.
1600 MONROVIA AVE.
NEWPORT BEACH, CA 92663

&

ANAHEIM COMPUTER
1027 N. MAGNOLIA
ANAHEIM, CA 92801
(714)826-4680 ♦ FAX (714)826-4682

Continued from page 130

KID CUTS

Programmed By: Ken Bull
Published By: Brøderbund
For: MS-DOS (640K, VGA graphics and mouse, audio card recommended)
List Price: $59.95 (school edition and lab packs also available)

Kid Cuts is an electronic arts-and-crafts program designed for ages 4–12. You can use a rich set of graphic tools to customize a variety of projects, print them, cut them out, and assemble them. The package even includes safety scissors.

The graphic tools are similar to those in Kid Pix, Brøderbund's very successful paint program released earlier this year. There are "wacky brushes" that create amusing special effects, each accompanied by its own sound. A new tool is the Magic Wand, which can change the facial expression on an animal or doll with a single click. Kid Cuts can "swap" or import Rubber Stamp icons from Kid Pix or Kid Pix Companion, but it is a complete standalone application.

Graphics and Animation: 9
Sound: 9
User Interface: 9
Overall Value: 9

You begin at the Project Picker, where your choices include Animals, Masks, Jigsaw Puzzles, Hats, Paper Dolls (hey, it should be Action Figures for the guys), Puppets, Greeting Cards, Shapes, and Rainy Day (a catch-all category that includes play money, paper airplanes, and other surprises). The base graphics are all professionally drawn, simple, and attractive. The Jigsaw Puzzle maker can import graphics in .PCX format.

The program is compatible with most popular dot-matrix, ink-jet, and laser printers (including PostScript). Color printing is supported (with a palette of sixteen colors) if you really want to miss out on all the fun and mess of crayons and markers. I also highly recommend a glue stick.

The package includes both 5.25" and 3.5" media. After installation, Kid Cuts takes up 2,977,152 bytes of hard disk space. The 44-page user manual is packed with ideas and suggestions. It also admonishes you to "be a good citizen and recycle your scrap paper."

Kid Cuts gives you a limitless supply of paper tigers. Kid Cuts is a good example of how well-designed software can encourage the innate creativity and imagination that school tries so hard to stifle in kids. (Brøderbund, Inc., 500 Redwood Blvd., PO Box 6121, Novato, CA 94948-6121. 1-800-521-6263)

AMIGA SOFTWARE REVIEWS

CHARTS&GRAPHS

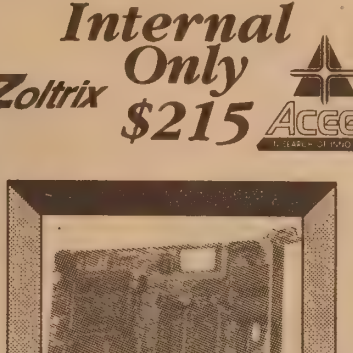
Published By: Technical Resource Systems Laboratory
List Price: $99.95
Reviewed By: Douglas J. Nakakihara

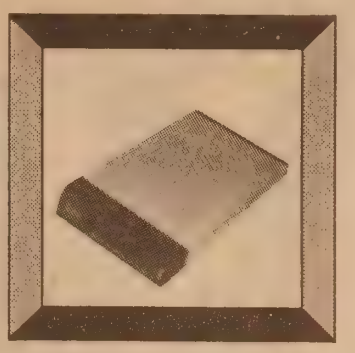
If you have ever wanted to create a chart using your

Continued

14.4 Send/Receive Fax Modem
V.32, V.32bis, V.42, V.42bis

Internal Only Zoltrix $215 ACCEX





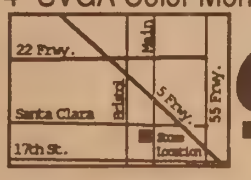
External Only Zoltrix $239 ACCEX

SUPRA Windows+ DOS Software $229

• 14,400bps-Data/Fax Speeds • Supports Com 1-4 •
• UR ART 16550 (MNP5) • Software Included •
• 5 Year Warranty •

SUPER VALUES

• 2400 Internal Modem	$27
• 2400/9600 Internal Send Fax Modem	$29
• 2400 External Modem (MNP5)	$49
• 24/48 Pocket Send Fax Modem (MNP5)	$55
• 96/96/24 Pocket S&R Fax Modem (V.42bis)	$99
• 96/48/24 S&R Fax Modem DOS+Windows	$45
• 96/96/24 S&R Fax Modem (MNP5)	$53
• 96/96/24 S&R Fax Modem (MNP5)+Windows	$58
• 96/96/24 S&R External Fax Modem (MNP5)	$85
• 96/96/96 Internal V.42bis (MNP2-5)	$189
• WinFax For Windows Add	$10
• Bit Fax OCR For Windows	$59
• 9600 Internal Modem V.42bis	$169
• 9600 External Modem V.42bis	$189
• Aero 3-Button Mouse	$9
• Aero 3-Button Trackball Mouse	$19
• Aero Mouse Pad	$2
• 101Keyboard	$19
• IDE Cont. Card 2S, 1P, 1G	$14
• 512K SVGA Card	$35
• 256K SVGA Card	$28
• Trident SVGA Card, 1 Meg	$55
• Cases-Mini Desktop/Tower, 200 Power Supply	$49
• Medium/Full Cases	$69/$89
• 1x3-70NS Memory Chip	$32
• Glass Filter–Increases Resolution	$9
• Optical Glass Filter–Anti-Static, Radiation For Glare	$19
• Media Concept Sound Card–Sound Blaster Compatible	$59
• Gallant Sound Card–Sound Blaster Compatible+Speakers, Microphone & Game	$89
• Speakers-Pair	$12
• 14" SVGA Color Monitor .28 (1024x768) Interlaced	$249
• 14" SVGA Color Monitor .28 (1024x768) Non-Interlaced	$269



Parking In Rear Of Building

Computer Max
2218 N Main St., Santa Ana, CA 92706
TEL (714) 953-0233 • FAX (714) 953-0255

Whether your office has one computer or one hundred....

We keep you working

AUTHORIZED TECHNICAL SERVICES has the experience *and* the expertise to handle your equipment service needs. Whether you're running one small office with one micro computer, or a statewide network of offices with a complex inventory of computers, video display terminals, printers and data communications devices—you simply cannot afford "down time". Call **ATS** today to find out just how easy it is to stay productive

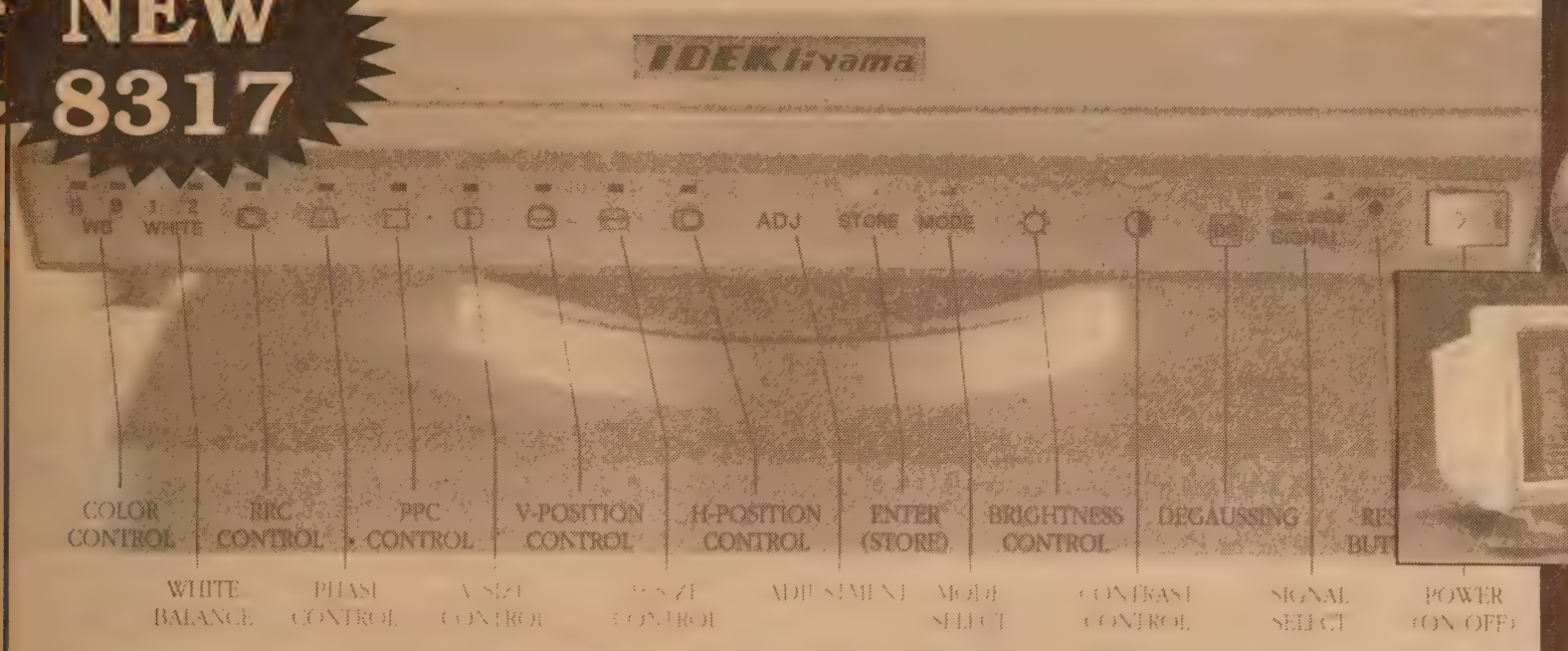
ATS
AUTHORIZED TECHNICAL SERVICES
1-800-451-4057

HERE'S A PARTIAL LIST OF EQUIPMENT WE SERVICE:
MICROCOMPUTERS: Dell, Epson, Advance Logic (ALR), AT&T, Everex, Leading Edge, AST Research, Compaq, IBM. **LOCAL AREA NETWORKS:** 3Com, Novell. **STORAGE DEVICES:** IOmega (Bernoulli). **DOT MATRIX PRINTERS:** Alps, Datasouth Epson, NEC, Panasonic, Citizen, Texas Instruments, C. Itoh, Digital Equipment (DEC), IBM, Okidata, Printek, Toshiba. **PLOTTERS:** Hewlett-Packard, IBM. **THERMAL PRINTERS:** IBM, Texas Instruments, Panasonic. **LINE PRINTERS:** Data Products, Printronix. **LETTER QUALITY PRINTERS:** C. Itoh, Diablo, NEC Spinwriters. **LASER PRINTERS:** Canon, Epson, IBM, AST, TI, Hewlett-Packard. **VIDEO DISPLAY TERMINALS:** Digital Equipment (DEC), Link, Qume, Tab, Televideo, Wyse.. **DATA COMMUNICATIONS:** Hayes.

ATS SERVICE CENTERS:
Los Angeles (310) 839-0020
Orange County (714) 937-0332
Oakland (510) 638-4449
Sacramento (916) 923-2944
San Jose (408) 970-9860

MICROPROCESSOR CONTROLLED

NEW 8317



386 40MHz
64K CACHE
130 MB HARD DISK

- 386DX-40MHz & AMI BIOS
- 4MB (80ns) Exp. to 32MB
- Socket for 387 or 3167
- 64K Cache
- 1.2 MB & 1.44 MB Floppy Disk
- 130 MB Hard Disk (IDE)
- 2 Serial, 1 Parallel, 1 Game Ports
- Enhanced 101 Keyboard
- Mini Tower Case & 200W PS
- Super VGA Monitor & Card (16 Bit 1 MB, .28 Dot 1024 x 768)

$1050

VIDEO & MONITOR UPGRADE

#9GXi & GXi lite

Model		Price
GXi	Level 24 1280 x 1024 256 Color (WIN)	$1210
	Level 25 1280 x 1024 256 Color (CAD)	$1352
GXi te	Level 29 1280 x 1024 65,536 Color	$1824
	Level 20 1280 x 1024 16 Color (WIN)	$595
GXi lite	Level 21 1280 x 1024 16 Color (CAD)	$695

VIDEO 7 SPEA 1280

SPEA 1280 x1024 256 or 16 From 16.7 Million-Palette $1799

HELIO TURBOCOLOR 1280

Model	Price
TC 16 (s3) 1280 x 1024 16 Color Non-Interlaced	$350
TC 256 (s3) 1280 x 1024 256 Color Non-Interlaced	$499
TC 256 (s3) EISA Same as Above [TC 256 (s3)]	$699

DIAMOND SPEEDSTAR & STEALTH

Stealth VRAM 1MB (s3)	$245
Stealth 24	$175
Stealth 24 VESA LB	$215

IDEK-MULTIFLAT SERIES (17" & 21")

MF-8317 (30 to 65KHz, .26, 1280 x 1024) Microprocessor MPRII Rated	$1099
MF-5121A (22 to 65KHz, .31, 1280 x 1024)	$1895
MF-5221A (30 to 80KHz, .31, 1280 x 1280)	$2095
MF-5321A (30 to 80KHz, .31, 1280 x 1280)	$2265
MF-5421A (30 to 80KHz, .26, 1600 x 1280)	$2495

486 33MHz
256K CACHE
170MB HARD DISK

- 486DX-33MHz & AMI BIOS
- *ISA STANDARD BUS*
- 4MB (70ns) Exp. to 32MB
- Socket for Weitek
- 1.2 & 1.44MB Floppy Disk
- 170MB Hard Disk (IDE)
- AT I/O 2 Serial, 1 Parallel, 1 Game Ports
- Enhanced 101 Keyboard
- Mid Tower Case & 220W PS
- Super VGA Monitor & Card (16 Bit 1MB, .28 Dot 1024 x 768)

$1350

486/66MHz DX2 ..... add $275

VISA — ONE YEAR LIMITED PARTS AND LABOR WARRANTY — MasterCard

486 33MHZ VESA
256K CACHE
170MB HARD DISK

- 486-33MHz & AMI BIOS
- *VESA LOCAL BUS*
- 4MB (70ns) Exp. to 32MB
- VESA LB Dual HD/FD Controller
- 1.2 & 1.44 Floppy Disk
- 170MB Hard Disk (IDE)
- AT I/O 2 Serial, 1 Parallel, 1 Game Ports
- Enhanced 101 Keyboard
- Mid Tower Case & 220W PS
- SP-VGA Monitor & Card (32 Bit Accelerator)

$1550

486/66MHz DX2 ..... add $275

COMPUTER CONCEPT

15438 E. VALLEY BLVD.
CITY OF INDUSTRY, CA
91746

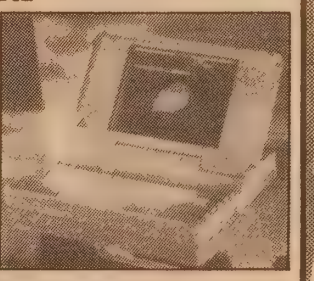
(818) 333-8627

FAX: (818) 961-6198

Mon.-Fri.: 9:30-6:30 Saturdays: 10:00-5:00
Prices Subject to Change Without Notice.

LEADING EDGE NOTEBOOK

- 386SX/25MHz
- 4MB RAM
- 1.44FDD
- 80MB
- VGA LCD
- Mouse
- MS DOS
- Windows
- Works for Windows



$1450

Color Available

SPEED

SYSTEMS

386SX-33/386SX-25

- AMD CPU
- 2MB RAM
- 40MB Hard Drive
- 1.2 & 1.44MB Floppy Drive
- SVGA .39 Monitor
- 256K VGA Card
- 2 Serial, 1 Parallel and 1 Game Port
- Mini Tower Case
- 101 Keyboard
- Mouse (Hi-Res)

$735/$710

486SX-25/386DX-40

- Intel/AMD CPU
- 4MB RAM
- 120MB Hard Drive 15ns
- 1.2 & 1.44MB Floppy Drive
- SVGA .39 Monitor
- 256K VGA Card
- 2 Serial, 1 Parallel and 1 Game Port
- Mini Tower Case
- 101 Keyboard
- Mouse (Hi-Res)

$1080/$990

486DX2-66/486DX-33

- Intel CPU/4MB
- 64K Cache Memory
- 120MB Hard Drive 15ns
- 1.2 & 1.44MB Floppy Drive
- SVGA .28 Monitor (NI Monitor)
- 1MB SVGA Card
- 2 Serial, 1 Parallel and 1 Game Port
- Mini Tower Case
- 101 Keyboard
- Mouse (Hi-Res)

$1610/$1350

MOTHERBOARDS

386SX-33MHz	$99
386DX-40MHz w/64K	$179
486SX-25MHz	$235
486SX-25MHz w/64K	$250
486DX-33MHz w/256K	$458
486DX-50MHz w/256K	$605
486DX2-66MHz	$730

NOTEBOOKS

386SX-25 2MB 40MB	$1210
386DX-33 4MB 80MB	$1435
486SX-25 4MB 80MB	$1465
486DX-33 4MB 120MB	$1975
486DX-33 4MB 240MB COLOR	$2850

VESA VL STANDARD
Local Bus Upgrade
$120!!

HYDRA DEVICE
371 Oak Place, Suite G
Brea, CA 92621
(714) 529-0775 or fax us at (714) 529-0371
Prices subject to change without notice.

We accept:

PRODUCT SPOTLIGHT

continued from page 135

Amiga, TRSL's Charts&Graphs (C&G) may be for you.

You begin to build charts by entering data in a spreadsheet-like table. You can also import comma-, tab-, or space-delimited data files. Additionally, columns and rows can be transposed and simple arithmetic operations on the columns can be performed. All of these features can be real time-savers.

The chart-type is selected graphically through a requestor containing a small picture of each type of chart. Many variations of line, scatter, pie, bar, and column charts are provided, as well as three-dimensional versions when appropriate.

IFF images can be used as backdrops, chart columns, and line points. When used in columns, the image is stacked to represent the column. Images as well as text can be layered on the charts as movable objects. All standard Amiga bit-mapped fonts are supported. Line, box, and arrow draw capabilities are also available.

Charts can be saved as C&G chart files for future editing or as IFF images. Output is generally limited to the Amiga display resolution; however, PostScript is also supported for higher-quality output.

C&G uses a straightforward and logical approach which makes the program very easy to use. The thick user manual includes a lengthy tutorial, but it is also very easy to just jump right in. (TRSL, PO Box 94263, Las Vegas, NV 89193-4263) ■

BAR CODE IS OUR SPECIALTY

INPUT AUTOMATION, INC.

The single source for all your bar code system needs: hardware, software, consulting and system design. Our philosophy is based on two principles: high-quality industrial products, and the best technical support available.

DESIGN AND CONSULTING

To create your optimal solution, an Input Automation consultant will design a complete system, and then recommend equipment that fills your exact needs.

We will not be satisfied until our bar code system meets your demanding standards.

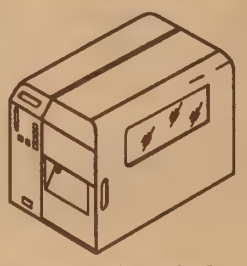
Call today for free info & product information

(Dealer inquiries welcome)

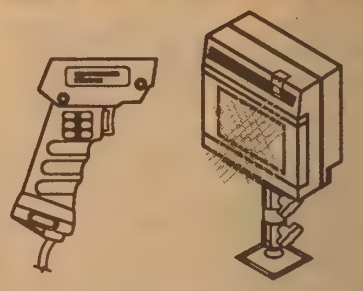
Call for an appointment to see our Showroom

Southern California
Tel: (310) 539-3598
Fax: (310) 530-2849
Tel: (714) 859-9223

Northern California
Tel: (510) 685-6563
Fax: (510) 682-6061

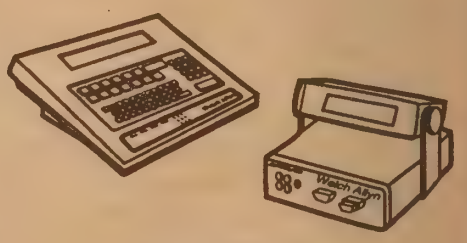


Bar Code Label Printers, Software, and Supplies



Laser Scanners. Omnidirectional, hand-held/hands-free, fixed mount.

Panasonic Portables. Recognized the world over for quality



Welch Allyn bar code readers/scanners. Over 15 years leadership in bar code manufacturing.

INPUT automation, inc.
Authorized Value-Added Distributor

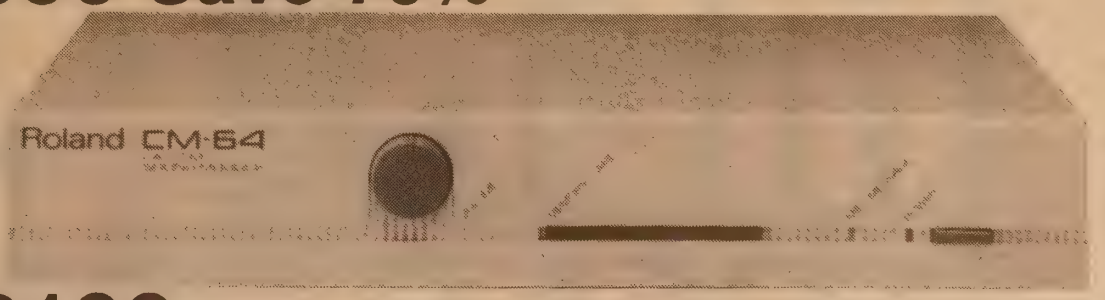
©1992 Copyright Input Automation, Inc. All rights reserved. All product names mentioned are trademarks of their respective manufacturers. Input Automation, Inc. recognizes these trademarks.

Upgrade Your SoundBlaster & MT32

Roland CM-64 $399 Save 70%

List $1295

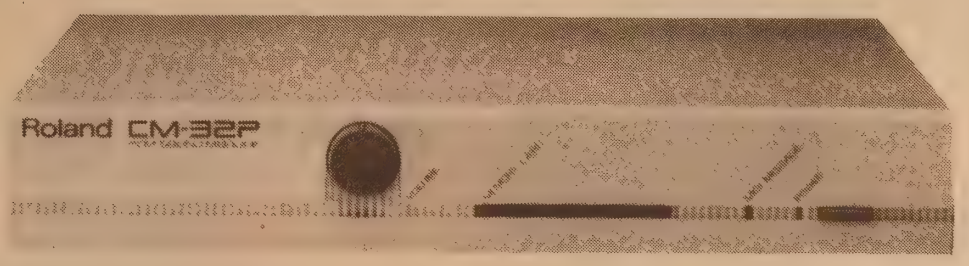
√ 63 Note Polyphonic
√ 15 Midi Channels
√ Uses U20 Waveform Cards
√ MT-32 Compatible



Roland CM-32P $199

Save 79% List $895

√ 31 Note Polyphonic
√ 6 Midi Channels
√ Uses U20 Waveform Cards



We Feature Allen & Heath,Amiga,Apple,Atari,Creative Music Systems,Digidesign,HP,JLCooper, Kawai,KMX,Mackie, MediaVision,MidiMan,Niche,PC Clones,Peavey,Roland, Turtlebeach Products & More!

Over 100 Midi Books from $5

EZ Financing by BenCharge. Call for Details!

Over 400 different Midi Programs!

The Latest Products and Largest Inventory of Software! Compare Amiga,Atari,Mac & PC Software!

CalkWalk 4.0 Seq. $99	Band in a Box Pro $69	SoundBlaster & Others From $99
Mackie 1202 Mixer $319	Midi Interfaces From $50	
Dr Synth & SCC1 Sale	Notation Prgm From $50	Thousands Of Sounds From $15
TB MultiSound Card $559	Peavey DPM 3se $1695	

Finale Users Group Feb 24
Finale Class Starts Feb 16

Free Phone support on products purchased from us.

Private Tutoring in your home or studio by the experts

Monday Night Midi Seminars The Free EASY Introduction to Midi.

Rent Our Atari,PC or Mac for $8 hr. Laser Print Outs $1 a page!

We'll be at the Computer Swapmeet in Pomona February 20 & 21

-Music/Midi BBS (818) 789-4287

The Electronic Music Box

14947 Ventura Blvd. Sherman Oaks (818) 789-4250

EISA ◆ VESA VL BUS ◆ EISA ◆ VESA VL BUS

HIGH SPEED GRAPHICS SOLUTIONS

EISA ◆ VESA VL BUS ◆ EISA ◆ VESA VL BUS

INTRODUCING THE FASTEST PC IN THE WORLD

CAD/CAM 32 BIT EISA VL BUS

Features state-of-the-art 32 Bit VESA VL Local Bus for the ultra Hi-Speed GUI Graphic Accelerator, plus Cache IDE speed up to 50 times faster for CAD/CAM graphic applications.

System Includes:

- 80486, 256K Cache, 16MB RAM, TEAC 1.2 and 1.44 FD
- **2 32 Bit VLB, 3 32 Bit EISA, 5 16 Bit ISA Slots**
- Maxtor 364MB IDE Hard Drives
- **32 Bit VLB ATI Ultra Pro w/2MB, 32 Bit VLB IDE/IO**
- Full Tower Case w/LED Digital Display and PS
- **17" IDEK 5217 LR NI Flat Screen VESA Monitor**
- Fujitsu Keyboard, DOS 5.0 & Windows 3.1 w/Mouse

33MHz CAD486 **$3695**
66MHz CAD486 **$3995**

MULTIMEDIA PERSONAL SYSTEM

Features the powerful multimedia stereo sound and visual excitement with a 16.7 million true color display, Sony CD-ROM internal drive, sound board, 2 leading CD software titles and more . . .

System includes:

- 256K Cache, 4MB DRAM
- Teac 1.2 & 1.44MB Floppy, **170MB** IDE Hard Drives
- **24 Bit 16.7 Million** Color SVGA
- 14" VESA Non-Interlaced Flicker-Free Color Monitor
- 16 Bit **Sound Blaster Pro** w/2 CD, **Sony CD-ROM**
- 101 Keyboard, DOS 5.0 & Windows 3.1 w/Mouse

386/40 MPC **$1745**
486/33 MPC **$1995**

PERIPHERALS UPGRADE with System Purchase

- **IDEK 17" 5217 Monitor, 30-57 KHz** $875
- **15" Non-Interlaced Flat Screen Monitor** 495
- **Aplus 14" .28 dpi Non-Interlaced 28-62 KHz** 295
- **Colorado 120 MB Tape Back-up Drive** 195
- **Archive 250 MB Tape Back-up Drive** 225
- **Zyxel 14400 bps Internal Fax/Modem** 325
- **Dynalink 14400 bps Internal Fax/Modem** 270
- **Dynalink 9600 bps Internal Fax/Modem** 220
- **TeleLink Voicemail/Fax/Modem** 195
- **9600/2400 bps Internal Fax/Modem** 75
- **2400 bps Internal Modem** 40
- **Sony 31A CD-ROM w/Card** 285
- **Sound Blaster Pro 16 Bit w/2 CD** 185
- **Sony 31A CD-ROM w/Sound Commander Pro** 450
- **Media Concept w/Speaker, Microphone** 95

486-66 ACCELERATOR

- 80486DX2-66 CPU
- 2 32 Bit VLB Slots
- 8MB, 256K Cache
- Teac 1.2 & 1.44 FD
- 210MB IDE Drive
- 32 Bit VLB Graphic Accelerator w/1MB
- 32 Bit IDE I/O, 2S/1P/1G
- 14" Non-Interlaced SVGA Monitor, .28dpi, 72Hz at 1024x768
- Med-Size Tower Case
- Fujitsu 4700 Keyboard
- DOS 5.0, Windows 3.1 w/Mouse

$2290
w/17" IDEK 5217 . . $2890

486-33 VESA LOCAL BUS

- 80486DX-33 CPU
- 2 32 Bit VLB Slots
- 64K Cache
- 4MB Memory
- Teac 1.2 & 1.44 FD
- 120MB IDE Drive
- ET4000 HiColor SVGA
- Super IDE I/O, 2S/1P/1G
- 14" Non-Interlaced SVGA Monitor, .28dpi
- Mini Tower Case
- Enhanced AT 101 KB
- Hi-Resolution Mouse

$1445
w/32 Bit Accelerator Add $75
w/32 Bit IDE I/O $45

WANT A FASTER COMPUTER OR LARGER HARD DRIVE? CALL FOR FREE ESTIMATE UPGRADE TO A 486-33MHz FROM

$249

NEW CYRIX 486 SYSTEM

- Cyrix 486-33 DLC
- Free Math-Coprocessor
- 64K Cache up to 256K
- 4MB System Memory
- Teac 1.2 & 1.44MB Floppy Drive
- 120MB IDE Drive
- Super IDE I/O w/2S/1P/1G
- Trident 8900c SVGA w/1MB
- 14" SVGA Color Monitor .28dpi
- Mini Tower Case w/200W PS
- Enhanced AT 101 KB
- Hi-Resolution Mouse

$1195 CASH

Upgrade Kit: 40MHz w/Non-Interlaced Monitor $1295

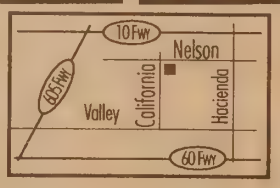
5 Years labor, 1 Year Parts Warranty for Any system

(818) 855-5220 • Fax: (818) 968-3704

15046 E. Nelson Ave., Unit 1, City of Industry, CA 91744

◆ Prices Subject to Change Without Notice.
◆ Government, University & Corporate P.O. Welcome

Store Hours: Mon-Fri: 10:00 AM-6:00 PM ◆ Sat: 11:00 AM-5:00 PM



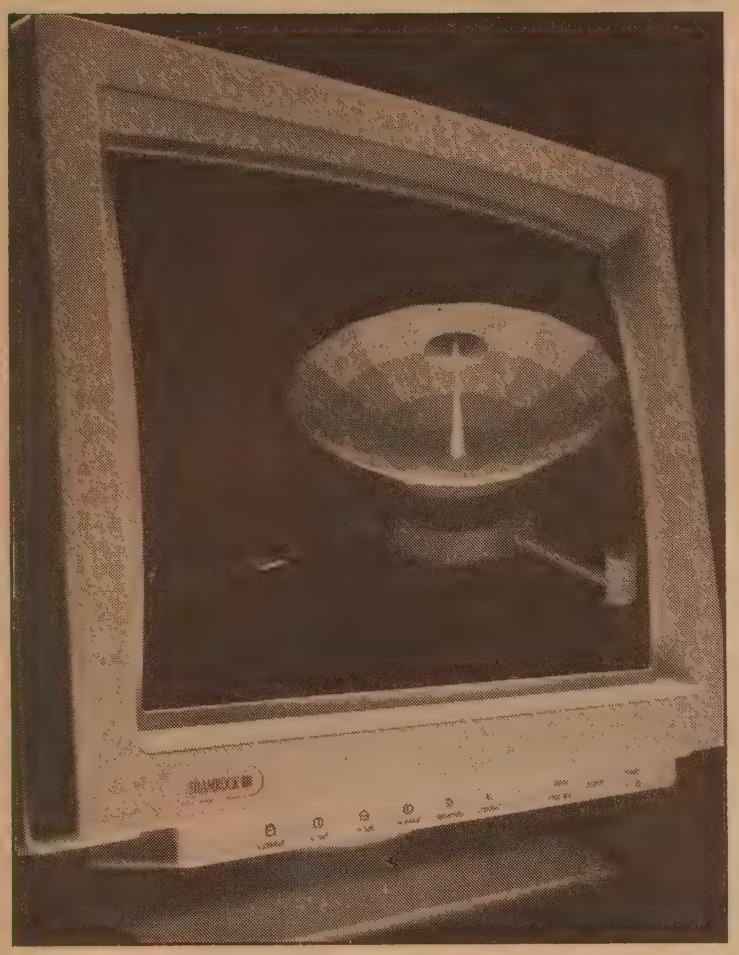
MasterCard VISA

MICRO OPERATION

SHAMROCK

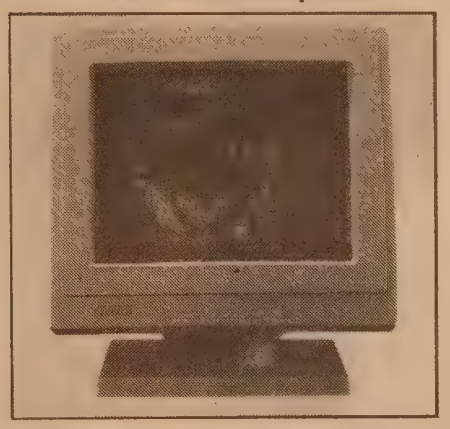
The Autoscanning Monitor

Quality and Design With the Technology of Today and Tomorrow



SRC-1451 14" HYPER VGA I

- Horizontal Frequency: 30-38KHz
- Resolution: Maximum 1024x768 (Interlaced) .28mm CRT
- Full Screen • Universal Power Supply 110/220
- Compatible With Apple Mac II
- Low Radiaton Options

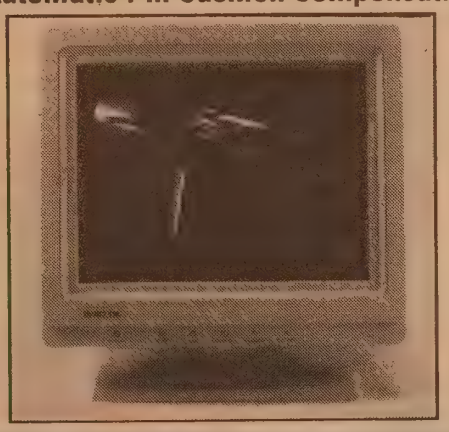


SRC-1452 14" HYPER VGA II

- Horizontal Frequency: 30-38KHz, 47-50KHz
- Resolution: Maximum 1024x768 (Non-Interlaced) .28mm CRT
- Full Screen • Universal Power Supply 110/220
- Compatible With Apple Mac II

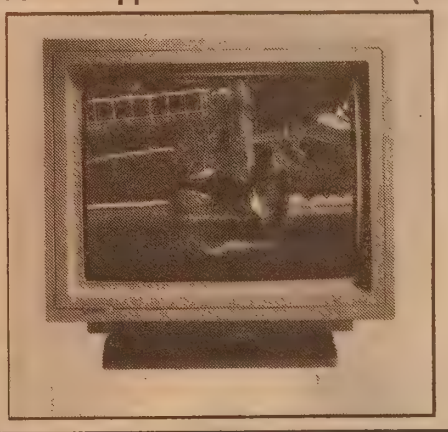
SRC-1403/SRC-1501 14", 15" HYPER VGA III

- Horizontal Frequency: 28-64KHz
- Resolution: Maximum 1280x1024 (Non-Interlaced) .28mm CRT
- Compatible With Apple Mac II
- Refresh Rate: 70Hz at 1024x768
- VESA Standard
- Automatic Pin Cushion Compensation



SRC-1901 20" HYPERSCAN COLOR UNITS

- Horizontal Frequency: 27-72KHz
- Resolution: Maximum 1280x1024 (Non-Interlaced) .31mm CRT
- DBF (Dynamic Beam Forming)
- BNC And D-Sub (9-Pin) Input
- Compatible With SPARC Station 1152x900 And Apple Mac II 1152x870 (Dual Page)



FOR PURCHASING AND/OR OTHER INFORMATION, PLEASE CONTACT YOUR LOCAL COMPUTER DEALER.

Big Boy's Toy at INFINITY SYSTEMS GROUP

- Performance
- Reliability
- Flexibility
- Upgradability
- Compatibility
- Serviceability
- Guarantee/Warranty
- Price

ORCHID

INFINITY SYSTEMS GROUP, INC.

SALES OFFICE
11768 W. Pico Blvd.
Los Angeles, Ca 90064
Tel: (310) 575-4690
Fax: (310) 575-4681

CORPORATE OFFICE
16580 Harbor Blvd., Ste. M
Fountain Valley,Ca 92708
Tel: (714) 839-2440
Fax: (714) 839-3561

TECHNICAL SUPPORT
Tel: (714) 839-4000

VESA LOCAL BUS 486

intel inside

- *Intel 486™ Microprocessor*
- *Build-In Math-CoProcessor*
- *AMI BIOS w/System Setup Utilities*
- *250W Full Tower w/Digital Display*
- *256K 20ns Cache Memory*
- *4MB 70ns RAM Expendable to 64MB*
- *IDE Controller & 2 Serial/Parallel/Game Ports*
- *TEAC 1.2 & 1.44MB Floppy Drives*
- *200MB 15MS IDE Hard Drive*
- *32-Bit ET-4000 1280 SVGA Card (1MB; 32,768 Colors)*
- *SVGA Monitor (0.28mm, 1024x768 Non-Interlaced)*
- *Focus 129-Key Programmable Keyboard*
- *Free Hi-Resolution 3-Button Mouse*
- *Free Microsoft DOS 5.0 & Windows 3.1*

486DX-33 Local Bus $1675
486DX-50 Local Bus $1850
486DX2-66 Local Bus $1925
Upgrade to S3 Graphic Accelerator+.....+$95
Upgrade to 32-bit IDE/SCSI Controller ...+$245

ISA 486 PCs

intel inside

- *Intel 486™ Microprocessor*
- *Build-In Math-CoProcessor (DX or DX2)*
- *AMI BIOS w/System Setup Utilities*
- *230W Mid Tower w/Digital Display*
- *256K 20ns Cache Memory Expendable to 256K*
- *4MB 70ns RAM Expendable to 128MB*
- *IDE Controller & 2 Serial/Parallel/Game Ports*
- *TEAC 1.2 & 1.44MB Floppy Drives*
- *130MB 15MS Hard Drive*
- *SVGA Card w/1MB RMA*
- *SVGA Monitor (0.28mm, 1024x768 Non-Interlaced)*
- *101-Key Enhanced Keyboard*
- *Free Hi-Resolution 3-Button Mouse*
- *Free Microsoft DOS 5.0 & Windows 3.1*

SX-25 .....$1275
DX-33 .....$1470
DX-50 .....$1650
DX2-66 .....$1750

ISA 386 PCs

intel inside

- *Intel 386™ Microprocessor*
- *Math-CoProcessor Support*
- *AMI BIOS w/System Setup Utilities*
- *220W Mini Tower w/Digital Display*
- *64K 20ns Cache Memory (DX-33MHz)*
- *4MB 70ns RAM Expendable to 64MB*
- *IDE Controller & 2 Serial/Parallel/Game Ports*
- *TEAC 1.2 & 1.44MB Floppy Drives*
- *120MB 15MS Hard Drive*
- *SVGA Card w/1MB RMA*
- *14" 1024 Super VGA Color Monitor*
- *101-Key Enhanced Keyboard*
- *Free Hi-Resolution 3-Button Mouse*
- *Free Microsoft DOS 5.0 & Windows 3.1*

DX-33 .....$1075
SX-33 .....$999

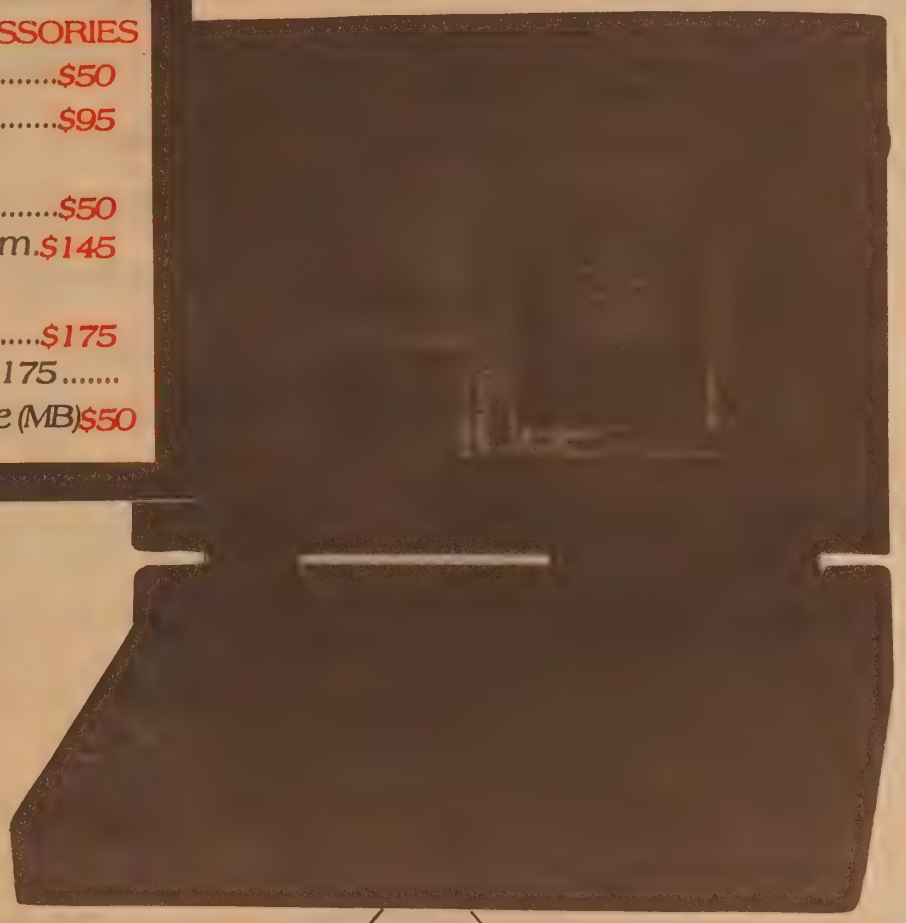
PCIII GAS PLASMA/LCD

- *Intel 486™ or Intel 386TM Microprocessor*
- *VGA LCD Display (Color LCD & Gas Plasma Available)*
- *4MB 70ns RAM & 130MB 15MS IDE Hard Drive*
- *TEAC 1.2MB & 1.44MB Floppy Drives*
- *2 Serial/1 Parallel/1 Game Ports*
- *16Bit VGA Card w/an External VGA Port*
- *110/220V Auto-Switchable Powerr Supply*
- *Free Hi-Resolution 3-Button Mouse*
- *Free Heavy Duty Carrying Case*
- *Free Microsoft DOS 5.0 & Windows 3.1*

486DX-33 .....$1945
486DX-50 .....$2145
486SX-25 .....$1645
386DX-33 .....$1595
Gas Plasma Display(1MB 1024 SVGA) ..+$250
Gas Plasma+(120:1 Hi-Contrast Ratio) ..+$500
Active Matrix Color LCD Display .....+$1750

OPTIONAL ACCESSORIES

- Battery Charger.....$50
- Battery Pack.....$95
- Automobile DC Adaptor.....$50
- Pocket Fax/Modem.$145
- PocketEthernet Adaptor.....$175
- Docking Station$175.....
- Memory Upgrade (MB)$50



COLOR 486DX-33 MAGIC

- Color VGA Display (640x480)
- Intel 486DXTM 33 MHz Microprocessor
- Build-in Math-CoProcessor
- Weight: 6lbs; Dimensions 11"x8.5"x2"
- 8K Burst Cache Memory
- 15ms Hard Disk Drive
- 130MB Hard Disk
- 1.44MB Internal Floppy Disk Drive
- Serial, Parallel, Keyboard, & Mouse Ports
- Support External VGA Display
- Support External Docking Station
- Resume/Suspension Power Management
- Rechargeable Battery & AC/DC Adaptor
- Deluxe Carrying Case
- **Free Hi-Resolution 3-Button Mouse**
- **Free Numeric Keypad**
- **Free Microsoft DOS 5.0**
- **Free Microsoft Windows 3.1**

$2850 ..... $2850

LCD 486DX-33 ULTIMATE

- LCD VGA Display (640x480)
- Intel 486DXTM 33 MHz Microprocessor
- Build-in Math-CoProcessor
- Weight: 6lbs; Dimensions 11"x8.5"x2"
- 8K Burst Cache Memory
- 4MB 70ns Fast RAM
- 125MB 15ms Hard Disk Drive
- 1.44MB Internal Floppy Disk Drive
- Serial, Parallel, & Keyboard Ports
- Support External VGA Color Display
- Support External Docking Station
- Resume/Suspension Power Management
- Rechargeable Battery & AC/DC Adaptor
- Deluxe Carrying Case
- **Free Hi-Resolution 3-Button Mouse**
- **Free Numeric Keypad**
- **Free Microsoft DOS 5.0**
- **Free Microsoft Windows 3.1**

$1975 ..... $1975

LCD 486SX-25 ULTIMATE

- LCD VGA Display (640x480)
- Intel 486SXTM 25 MHz Microprocessor
- Weight: 6lbs; Dimensions 11"x8.5"x2"
- 8K Burst Cache Memory
- 4MB 70ns Fast RAM
- 125MB 15ms Hard Disk Drive
- 1.44MB Internal Floppy Disk Drive
- Serial, Parallel, & Keyboard Ports
- Support External VGA Color Display
- Support External Docking Station
- Resume/Suspension Power Management
- Rechargeable Battery & AC/DC Adaptor
- Deluxe Carrying Case
- **Free Hi-Resolution 3-Button Mouse**
- **Free Numeric Keypad**
- **Free Microsoft DOS 5.0**
- **Free Microsoft Windows 3.1**

$1745 ..... $1745

IT'S TESTED INSIDE-OUT

Not just burned-in, all Infinity's systems must pass our 72-hour RARITON dynamic test - today's most advanced quality control testing procedure which drives every component twice as hard as it could ever be used under normal circumstanced. We seal all vibration affected components, silicone all cables to their sockets. And since you never have to worry about loose parts, you'll never lose your cool.

1-2-3 WARRANTY

You have full one year parts and labor warranty on every component in your system. Infinity extends the warranty for desktop systems: two years for mainboard and three years for labor.

CUSTOM CONFIGURATION

You can have a machine built in a way that meets your specific needs. Infinity's professional sales representatives will help you to choose your optimal configuration-even in any case - from a tower, or desktop, or even a gas plasma or LCD lunchbox.

EASY PAYMENT POLICY

No surcharge on VISA or Mastercard. Leasing and net-terms are available for qualified customers. Purchase orders from qualified corporations and institutions are accepted. APO's are welcome.

TECHNICAL SUPPORT
Tel: (714) 839-4000

INFINITY SYSTEMS GROUP, INC.

continued from page 51

Users already familiar with Quicken, by Intuit, will find that QuickBooks is similar to Quicken, but also includes basic inventory capabilities. The new Peachtree products for Windows have these as well as impressive graphical report writers, for users who want more extensive analysis.

Computer Associates' Simply Accounting is a well rounded, entry-level package with inventory and retail capabilities. The program allows the user to choose between cash or accrual non-inventory accounting, but the inventory function assumes all sales are on the FIFO method; i.e., the unit which has been on hand the longest is sold first. Accordingly, an adjustment to the books may be necessary before tax reporting.

MYOB, by Teleware, likewise has simple inventory and retail sales capabilities. Its reporting capabilities are limited because the program emphasizes ease-of-use by non-accountants, at the expense of accounting versatility.

Dac Easy and Peachtree offer especially well known low-end DOS packages.

If the inventory needs of your business are simple, there is little need for a fancier package. Instead, emphasis should be given to "personalizing" the chart of accounts and the inventory categories so that the reports will be meaningful to you.

A small computer store, for instance, might aggregate all of its hardware parts into just a handful of convenient categories. They won't be able to use the computerized accounting system for inventory control, but in a little shop, reordering time can be determined just by looking on the shelf. A periodic physical inventory provides detailed support of the accounting records.

The law doesn't permit a retailer with gross sales averaging over $5 million annually to use the simplified dollar LIFO method. However, because the business is larger and more complex, it relies on the accounting system for greater financial and managerial reporting capabilities, anyway.

TAX PLANNING FOR SMALL RETAILERS

Even entry-level software can assist a small business with year-end tax planning. For example, if a retailer has adopted the "lower of cost or market" method of valuing inventory, goods which have become unsalable or unusable in normal transactions should be valued at a bona fide selling price, less direct costs of disposition. Tax rules define bona fide selling price as the actual offering price of goods during a period ending not later than 30 days after the end of the year.

As part of year-end tax planning, the retailer should therefore determine which goods should be offered for sale at discount. Even if all the merchandise doesn't sell, a bona fide offer should be sufficient to support a write-down for tax purposes. Computerizing inventory records in such a way that items or classes of inventory can be readily sorted makes it easier to determine the tax consequences of various discounts. The unorganized retailer misses this important opportunity.

Even the small business owner can be presented with some fairly difficult tax computations to make at year end. How should the small corporation distribute cash to its owner? If the distribution is a dividend it will be taxed twice, unless the corporation makes an election to be taxed under a special set of rules. If the distribution is a loan, the imputed interest rules will automatically cause the business to be treated as having received interest income. If the distribution is compensation for services, it will be subject to employment taxes as well as income taxes. If it's rent for the use of property, various limitations may apply to any losses.

Consider Jake, who owns 51% of the stock in Jake's NewsStand and Chips. Because Jake is a related taxpayer, no deduction will be allowed for any expenses (such as salary) payable by the newsstand to Jake until he includes the payment in his own income. Not only must Jake sit down and compute the tax consequences to the corporation, but he must simultaneously compute the tax effects to himself, personally. Without having both his business and individual transactions computerized, it would be difficult to estimate how much compensation to pay himself as part of year-end tax planning.

LARGER SMALL RETAILERS

A retailer who has outgrown entry-level accounting software should take a closer look at The Accounting Expert, by Micronetics. This is not a full-blown, high-end package, but is certainly capable in its inventory and retail functions. Micronetics includes inventory, sales analysis, and sales order processing modules, as do many of the true high-end packages, but sells for perhaps half as much and is easier to use.

Always make sure that any software you're considering accommodates the way you do business. Users often know in advance if they have some quirky requirement. If, for example, your store purchases inventory in one unit of measure, sells in a combination of other units of measure, and then sells off odd-lots or scrap. In this case, the software will need to accommodate flexible units of measure.

The next major hurdle facing retailers appears when average annual gross receipts for the three preceding years are at least $10 million, at which point the uniform capitalization rules apply.

All retailers capitalize direct costs (invoice costs, including freight) of products to be sold, but small retailers are generally not required to capitalize certain indirect costs associated with inventory. But if your company is nearing $10 million in gross sales, be aware that the uniform capitalization rules may require complex allocations demanding more sophisticated software. It would be unfortunate for an $8 million company to design a system which would quickly become obsolete. [For some of the high-end packages which may be appropriate for larger retailers, see my *MicroTimes* article, "Selecting Accounting Software," July 6, 1992, or call my office for a copy.]

In the inventory needs of your business are simple, there is little need for a fancier package. Instead, emphasis should be given to "personalizing" the chart of accounts and the inventory categories so that the reports will be meaningful to you.

PERIPHERAL NOTES

Sometimes I'll hear from a store owner who, after returning from some trade show, is under the impression that the essence of a computerized accounting system is a good scanner and fancy graphics. A scanner is actually nothing more than an input device which is added on to a system of accounting and internal control previously planned and thought out by experts. The scanner has as much to do with retail accounting as a keyboard has to do with computing.

I have seen many instances of store owners signing on the dotted line for some pricey computer equipment, without having a clear understanding of what are their accounting needs. A needs assessment, conducted if necessary by a qualified accounting professional, should be your first step in selecting a retail accounting system. ■

RESOURCES:

David Simon, CPA, MS Taxation
Oakland, CA (510)893-5753

QuickBooks
Intuit, Inc.
155 Linfield Ave.
Menlo Park, CA 94026
1-800-624-8742.

MYOB, $249
Teleware, Inc.
300 Roundhill Dr.
Rockaway, NJ 07866
1-800-322-MYOB

Simply Accounting, $199
Computer Associates International, Inc.
1240 McKay Dr.
San Jose, CA 95131
1-800-225-5224

Accounting Expert
Micronetics, Inc.
5975 N. Federal Highway
Fort Lauderdale, FL 33308
1-800-443-8000

Peachtree Software, Inc.
1505 Pavilion Pl.
Norcross, GA 30093
1-800-247-3224

486 - 66 MHz DX2 Station

8 MB RAM
256 KB Cache
1.2 & 1.44 MB Floppy Drive
2S / 1P / 1G
245 MB IDE Hard Drive
Focus 9000 Key Board
Full Size Vertical Case
Diamond Stealth VRAM
MAG 15" N-I Monitor
(1280 x 1024, 0.28mm)
Serial Mouse

$2339

486 - 50 MHz CAD Station

8 MB RAM
256 KB Cache
1.2 & 1.44 MB Floppy Drive
2S / 1P / 1G
245 MB IDE Hard Drive
Focus 2001 Key Board
Full Size Vertical Case
Diamond 24x HI-COLOR
Arcus 15" N-I Monitor
(1280 x 1024, 0.28mm)
Serial Mouse

$2099

486 - 50 MHz SPECIALS

4 MB RAM
256 KB Cache
1.2 & 1.44 MB Floppy Drive
2S / 1P / 1G
245 MB IDE Hard Drive
Enhanced Key Board
Full Size Vertical Case
SVGA Card (1MB)
SVGA N-I Monitor
Serial Mouse

$1699

486 - 33 MHz SPECIALS

4 MB RAM
256 KB Cache
1.2 & 1.44 MB Floppy Drive
2S / 1P / 1G
120 MB IDE Hard Drive
Enhanced Key Board
Mini Vertical Case
SVGA Card (1MB)
SVGA 1024 x 768 Monitor
Serial Mouse

$1319

486DLC-33 SPECIALS

4 MB RAM
256 KB Cache
1.2 & 1.44 MB Floppy Drive
2S / 1P / 1G
120 MB IDE Hard Drive
Enhanced Key Board
Mini Vert. or Desktop Case
SVGA Card (1MB)
SVGA 1024 x 768 Monitor
Serial Mouse

$1169

386 - 40 MHz Super VGA

4 MB RAM
128 KB Cache
1.2 & 1.44 MB Floppy Drive
2S / 1P / 1G
120 MB IDE Hard Drive
Enhanced Key Board
Mini Vert. or Desktop Case
SVGA Card (1 MB)
SVGA 1024 X 768 Monitor
Serial Mouse

$1025

MISC.

MAG MX15 Monitor (15" - 0.28mm Dot Pitch)	$550
MAG MX17 Monitor (17" - 0.28mm Dot Pitch-1280x1024)	$1050
Arcus 15" (15" - 0.28mm Dot Pitch 1280x1024)	$450
TOSHIBA Monitor (17" - 0.31mm Dot Pitch)	$795
Shamrock SRC 1402 Monitor (14" - 0.28mm Dot Pitch, Non-Interlaced)	$275
Arcus CM1488 Monitor (14" - 0.28mm Dot Pitch, Interlaced)	$245
Orchid Fahrenheit 1280 24 Bit Super VGA Card (1MB)	$210
Intel 14.4K Satisfaxtion Fax/Modem	$409
SUPRA 14.4K Fax/Modem	$245
PRO SPECTRUM 16 Bit Stereo Sound Board	$185
ATI Graphics Ultra	$225
ATI Graphics Pro (2MB)	$575
Speedstar 24 Bit Hi-Color Super VGA Card (1MB)	$170
Diamond Stealth Super VGA Card (1MB)	$210
MicroSolution Tape Backup 80MB (External - Plug into Parallel Port)	$425

386SX - 33 MHz Super VGA

4 MB RAM
1.2 & 1.44 MB Floppy Drive
2S / 1P / 1G
80 MB IDE Hard Drive
Enhanced Key Board
Mini Vertical Case
SVGA Card (512 KB)
SVGA 1024 X 768 Monitor
Serial Mouse

$859

486DX-33/66 VLB VESA-VL STANDARD

A.I.R. Local Bus Motherboard
8 MB RAM
256 KB Cache
1.2 & 1.44 MB Floppy Drive
2S/1P/1G
Maxtor 245 MB IDE Hard Drive
Vertical Case (230 w. PS)
ATI Ultra-Pro Local Bus VGA
(2 MB VRAM)
MAG 15" Non-Interlaced Monitor
(1280 x 1024, 0.28 DPI)
Serial Mouse
Focus 9000 124 Key Keyboard

$2399/2679

486-50/66 MHz EISA

486-50/66 MHz EISA Motherboard
8MB RAM
256 KB Cache
1.2 & 1.44MB Floppy Drive
2S/1P/1G
Maxtor 340MB SCSI Hard Drive
ADAPTEC 1742 EISA SCSI Controller
Vertical Case (300 W. Power Supply)
ATI Graphics Ultra (1MB VRAM)
MAG 17" Non-Interlaced Monitor (1280 x 1024, 0.26 DPI)
Northgate Ultra 124 Keys Key Board

$3675/3875

NETWORK PRODUCTS

8 Bit Ethernet Card	$79
16 Bit Ethernet Card	$80
8 Bit Arcnet Card	$55
16 Bit Arcnet Card	$75
Arcnet Active Hub (8 Ports)	$125
NOVELL Netware V. 2.2 (5 Users)	$505
NOVELL Netware V. 2.2 (10 Users)	$1035
NOVELL Netware V. 3.11 (10 Users)	$1350
NOVELL Netware V. 3.11 (20 Users)	$1900
SCO UNIX Sys. V (Unlimited Users)	$1025
SCO Multiview Window Environment	$280
Digiboard	Call

Our Satisfied Customer List

ADRAY Mart Inc.
CAL STATE Of POMONA
CAL STATE Of LONG BEACH
LOMA LINDA University Nuerology Department
USC Medical School

- Two Years Labor And One Year Parts Warranty
- System & Components All Setup For Your Convinience
- Please Call For Price & Configuration not Listed
- Prices Are Subjected To Change Without Notice
- We Accept Corporation, University And Government's Purchase Order
- Please Call For NOVELL Networking Products And Services

Computer Technology A-1 1987 - 1992

9690 Telstar Ave. Suite 202
El Monte, CA 91731
Tel: (818) 575-2882 Fax: (818) 575-8058

RESOURCES

Calendar Of Events

CONFERENCES, SHOWS, AND OTHER SPECIAL EVENTS

FEBRUARY

February 22–26 Software Development 1993 Conference And Exhibition. Santa Clara. Miller Freeman, Inc. Call: (214)245-6012.

February 24–26 Orlando Multimedia '93: 11th Annual Conference On Interactive Instruction Delivery. Kissimmee, FL. Society for Applied Learning Technology. Call: 1-800-457-6812.

February 27 Computer Show & Sale. Anaheim Stadium, indoors. Richard James Corp. Call: 1-800-433-7469.

February 28 Computer Show & Sale. Antelope Valley Fairgrounds. MarketPro Shows. Call: (415)388-8893.

February 28–March 2 QuickTime & Multimedia Conference. San Francisco. Sumeria. Call: (415)904-0800.

MARCH

March 1–3 Second Annual Windows Hardware Engineering Conference. San Jose. Microsoft. Call: 1-800-421-6338.

March 3–5 Mobile World Conference & Exposition. Boston. DCI. Call: (508)470-3880.

March 3–5 The Third Annual Home Media Expo. Beverly Hills. American Expositions, Inc. Call: (212)226-4141.

March 6 Computer Show & Sale. CSUN, North Campus. Richard James Corp. Call: 1-800-433-7469.

March 6 Computer Show & Sale. Ventura Fairgrounds. MarketPro Shows. Call: (415)388-8893.

March 6–7 Clarion Developers Conference, West. Los Angeles. DataForce. Call: Monica de Gilham, (213)257-5670.

March 7 Computer Show & Sale. Glendale Civic Auditorium. Richard James Corp. Call: 1-800-433-7469.

March 7 Computer Show & Sale. Scottish Rite Center, San Diego. MarketPro Shows. Call: (415)388-8893.

March 7–12 GUIDE International Spring '93 Conference. Anaheim. GUIDE International Corp. Call: (312)644-6610.

March 13 Computer Show. LA Fairgrounds, Pomona. Computer Marketplace. Call: 1-800-800-5600.

March 14 Computer Show. Sequoia Conference Center, Buena Park. Computer Marketplace. Call: 1-800-800-5600.

March 14 Computer Show & Sale. Orange County Fairgrounds, Costa Mesa. Richard James Corp. Call: 1-800-433-7469.

March 16–17 The Workgroup Computing Conference. Washington, DC. DCI. Call: (508)470-3880.

March 17–19 UniForum 1993 Conference. San Francisco. UniForum. Call: 1-800-323-5155.

March 22–24 1993 International DataEase Users Conference. Orlando, FL. DataEase International. Call: Randy Newell, (203)365-2308.

March 27 Computer Show & Sale. CSUN, North Campus. Richard James Corp. Call: 1-800-433-7469.

March 28 Computer Show & Sale. Antelope Valley Fairgrounds. MarketPro Shows. Call: (415)388-8893.

APRIL

April 3–4 Computer Show. LA Fairgrounds, Pomona. Computer Marketplace. Call: 1-800-800-5600.

April 4 Computer Show & Sale. Civic Aud., Oxnard. MarketPro Shows. Call: (415)388-8893.

April 4 Computer Show & Sale. Glendale Civic Auditorium. Richard James Corp. Call: 1-800-433-7469.

April 5–7 Apple Enterprise Computing Conference. San Francisco. Apple Computer. Call: 1-800-841-AECC.

April 6–8 International Spectrum '93 Exhibition And Conference: BusinessPerson's Computer Show. Anaheim. IDBMA. Call: 1-800-767-SHOW.

April 10 Computer Show & Sale. Anaheim Stadium, indoors. Richard James Corp. Call: 1-800-433-7469.

April 18 Computer Show & Sale. Antelope Valley Fairgrounds. MarketPro Shows. Call: (415)388-8893.

MARCH 13

COMPUTER SHOW

Pomona

Computer Marketplace computer shows feature over three hundred exhibits with thousands of products. They are now featuring seminars open to all users—from the beginner to the advanced computer user. Admission is $7.00 and shows are from 10:00 am to 5:00 pm. Los Angeles County Fairgrounds (Fairplex), Pomona. Call:
1-800-800-5600.

APRIL 5–7

APPLE ENTERPRISE COMPUTING CONFERENCE

San Francisco

This conference is designed to bring together the right resources to provide IS professionals with the information and training needed to meet the changes and challenges of enterprise computing in the '90s. Apple and key partners will be introducing new products and technologies to help answer the challenges of integrating client/server, mobile computing, workgroup computing, and cross-platform development into your enterprise. Keynote speakers will include presentations by Apple President and CEO Michael Spindler, Lotus President and CEO Jim Manzi, and Taligent Chairman and CEO Joe Guglielmi. All registrants will receive a free copy of FileMaker Pro compliments of Claris Corp. For information and registrations, contact: Apple Enterprise Computing Conference, 444 Castro St., Ste. 1101, Mountain View, CA 94041. 1-800-841-AECC.

Continued

Computer MARKETPLACE

COMPUTER TRADE SHOW
WHOLESALE PRICES
OPEN TO THE PUBLIC

10:00 to 5:00 p.m.
Admission $7.00

"The Traveling Mall That Has It All"

Pomona Shows
FREE SEMINARS
300 EXHIBITS

Over a hundred companies having price wars with each other to compete for your business. You can't find this much inventory in a hundred computer stores nor can you get these prices. There is also a consignment table to sell your computer equipment.

FREE PRODIGY® w/qualified purchase

1993 SHOW DATES

March 13 Saturday — **POMONA** - L.A. County Fairgrounds (Fairplex)
Exit Highway 10 at Fairplex Drive. Go North to Mckinley, turn right. Turn Left on White Avenue to Gate 14.

March 14 Sunday — **BUENA PARK** - Sequoia Conference Center
Take the Beach Blvd. Exit off the 91 Freeway, go one block North to 7530 Orangethorpe.

April 3 & 4 Saturday & Sunday — **POMONA** - L.A. County Fairgrounds (Fairplex)

May 1 Saturday — **RESEDA** - Sherman Entertainment Center
From 101 Freeway, take Reseda off ramp, turn left (if traveling East) on Reseda Blvd. to Sherman Way, turn right, one block to Canby Street. 18430 Sherman Way.

May 2 Sunday — **BUENA PARK** - Sequoia Conference Center

May 15 & 16 Saturday & Sunday — **POMONA** - L.A. County Fairgrounds (Fairplex)

POMONA SEMINARS

Business Software Needs
Is My PC Obsolete?
Buying Your First Computer
Making Money With Your PC
Business Accounting Packages
Do You Need A LAN?
Windows Based Applications
Buying Your First Computer
Intro. To Windows

Co-sponsored with Team Vision & Focus Automation

(408) 778-5200 or 800-800-5600

VISA

MasterCard

Financing Available

NET

N E T

New Showroom:
7033 Orangethorpe Ave., Unit A, Buena Park, Ca 90621

386DX CACHE SYSTEMS

- 4MB RAM, 70ns
- 64K cache
- TEAC 1.2MB floppy drive
- TEAC 1.44MB floppy drive
- **105MB IDE hard drive,** ***16ms access time with 32K cache***
- 14" SVGA color monitor, 1024x768, .28 dot pitch
- 16 bit SVGA card w/1MB, 1024x768x256 colors
- 2 serial, 1 parallel, 1 game ports
- 101 enhanced keyboard
- Minitower or minidesktop case

Price	regular	CASH
386DX-33MHz	$1045	$969
386DX-40MHz	$1065	$989

Upgrade to: Maxtor 130MB ADD $30
Conner 170MB ADD $70

486 VESA LOCAL BUS SYSTEMS

- INTEL 80486 CPU
- 3 VESA Local bus slots
- 4MB RAM, 70ns
- 128K cache
- TEAC 1.2MB floppy drive
- TEAC 1.44MB floppy drive
- **130MB Maxtor hard drive,** ***15ms access time with 64K cache***
- 14" SVGA monitor, .28 dot pitch, 1024x768
- **VESA local bus 32 bit SVGA accelerator card with 1MB, displays up to 16 million colors**
- 2 serial, 1 parallel, 1 game ports
- 101 enhanced keyboard
- Minitower or minidesktop case

intel inside

Price	regular	CASH
486SX-25MHz	$1275	$1199
486DX-33MHz	$1475	$1399
486DX2-50MHz	$1575	$1499

FINALLY a VESA LOCAL BUS SYSTEM

that is loaded with features but is affordable!
Our systems come standard with:

- **3 VESA Local Bus Slots for more expandability than our competitors**
- **16.7 million** brilliant colors for true 24 bit images
- **CPU upgradeable**, our motherboard accepts any Intel 80486 CPU's (486SX-25MHz, SX-33MHz, DX-33MHz, DX-50MHz, DX2-50MHz, DX2-66MHz)

Price	regular	CASH
486SX-33MHz	$1325	$1249
486DX-50MHz	$1675	$1599
486DX2-66MHz	$1725	$1649

INTEL 486 HIGH PERFORMANCE SYSTEMS

- INTEL 80486 CPU
- 4MB RAM, 70ns
- 128K cache
- TEAC 1.2MB floppy drive
- TEAC 1.44MB floppy drive
- **130MB Maxtor hard drive,** ***15ms access time with 64K cache***
- 14" SVGA color monitor, .28 dot pitch 1024x768 resolution
- 16 bit SVGA card with 1MB 1024x768x256 colors
- 2 serial, 1 parallel, 1 game ports
- 101 enhanced keyboard
- Minitower or minidesktop case

intel inside

Price	regular	CASH
486SX-25MHz	$1175	$1099
486SX-33MHz	$1225	$1149
486DX-33MHz	$1375	$1299
486DX-50MHz	$1575	$1499
486DX2-50MHz	$1475	$1399
486DX2-66MHz	$1625	$1549

ADD $100 to upgrade to 32 bit VESA LOCAL BUS system includes motherboard with 3 V.L. slots and 32 bit SVGA card, 16.7 million colors

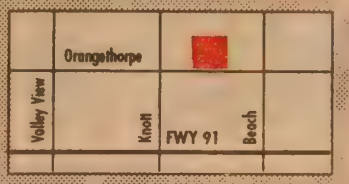
ADD $200 to upgrade to 15" flat screen SVGA monitor 1280x1024 non-interlaced, .28 dot pitch

ADD $40 to upgrade to 170MB Connor hard drive 17ms access time, 64K cache

ADD $30 to upgrade to 256K cache

ALL SYSTEMS CARRY FULL 1 YEAR

COMPUTER



TO ORDER CALL:
(714) 523-2367
FAX: (714) 523-2625

Hours:
Mon.-Fri. 10:00am - 7:00pm
Sat. 10:00am - 5:00pm
Sun. Closed

486DX EISA SYSTEM

- INTEL 80486 CPU
- 4MB RAM, 70ns
- 256K cache
- TEAC 1.2MB floppy drive
- TEAC 1.44MB floppy drive
- **130MB Maxtor hard drive,** ***15ms access time with 64K cache***
- 14" SVGA monitor, .28 dot pitch 1024x768
- **EISA 32 bit SVGA accelerator card with S3 accelerator** chipset and 1MB VRAM
- **EISA 32 bit IDE caching controller with 512K 4HD/2FD support, fast** ***16.5 MByte/sec transfer rate!***
- 2 serial, 1 parallel, 1 game ports
- 101 enhanced keyboard
- Minitower or minidesktop case

Price	regular	CASH
486DX-33MHz	$1999	$1899
486DX-50MHz	$2199	$2099

486DX CAD
Windows workstation with 17" N.I. monitor

- INTEL 80486 CPU
- 8MB RAM, 70ns
- 256K cache
- TEAC 1.2MB floppy drive
- TEAC 1.44MB floppy drive
- **213MB Maxtor hard drive,** ***15ms access time with 64K cache***
- **17" SVGA flat screen monitor,** .28 dot pitch 1280x1024 non-interlaced, digital auto-tracking low radiation, made by Panasonic in Japan
- **Diamond Speed Star 24 SVGA card with 1MB displays up to 1280x1024, and up to 16 million colors**
- 2 serial, 1 parallel, 1 game ports
- 101 enhanced keyboard
- Minitower or minidesktop case

Price	regular	CASH
486DX-33MHz	$2399	$2299
486DX-50MHz	$2599	$2499

Multi-Media Kit from Creative Lab
$540

Sound Blaster Pro
Creative Labs CD-ROM Drive (Panasonic) and 6 CD-ROM discs

Windows 3.1, M.S. Bookshelf, M.S. Works for Windows, Macromind Action, Authorware Star, Tempra Graphics, and Sherlock Holmes, Consulting Detective

Special
with Purchase of Any System
DOS 5.0
Windows 3.1
Mouse
Only $99

	regular/CASH
Motherboards (*OK*, with CPU)	
486DX2-66MHz ISA	$710/$680
with 128K cache EISA	$910/$880
and up to 32MB Vesa Local Bus, 3 V.L. slots	$760/$730
486DX-50MHz ISA	$650/$620
with 128K cache EISA	$850/$820
and up to 32MB Vesa Local Bus, 3 V.L. slots	$700/$670
486DX-33MHz ISA	$450/$430
with 128K cache EISA	$650/$630
and up to 32MB Vesa Local Bus, 3 V.L. slots	$500/$480
486SX-33MHz ISA	$350/$330
with 128K cache Vesa Local Bus, 3 V.L. slots	$400/$380
486SX-25MHz ISA	$320/$300
with 128K cache Vesa Local Bus, 3 V.L. slots	$370/$350
386DX-40MHz with 64K cache	$185/$180
386DX-33MHz with 64K cache	$165/$160
386SX-33MHz	$125/$120
386SX-25MHz	$105/$100
ADD-ON CARDS	
VESA local bus 1MB SVGA card (16.7 million colors)	$145/$140
VESA local bus 1MB SVGA card (S3 chipset, 16.7 million colors)	$200/$195
VESA local bus IDE cache controller (4HD/2HD, 512K to 16 MB w/OK)	$200/$195
VESA local bus NE2000 Ethernet card, 10Base T	$199/$195
EISA IDE cache controller card (4HD/2FD, 512K to 16MB w/0K)	$210/$205
EISA SVGA card with S3 chipset and 1MB VRAM	$310/$300
16bit NE2000 Ethernet card	$99/$95
16bit NE2000 Ethernet card, 10Base T	$109/$105
TVGA-9000 VGA Card w/256K (up to 512K)	$35/$34
TVGA-8900C 1MB Super VGA Card	$60/$59
Diamond SpeedStar-24 1MB VGA Card (16 million colors)	$150/$145
Diamond SpeedStar-24X 1MB VGA Card (16 million colors)	$175/$170

	regular/CASH
Diamond Stealth 1MB 24 (S3 chipset & 16 million colors)	$215/$210
Super IDE (2HD/2FD with 2s,1p,1g)	$18/$17
Sound Blaster Pro	$145/$140
Promise IDE cache controller card (2HD/2FD, w/512K)	$130/$125
2400 baud internal modem	$40/$39
9600/2400 baud internal fax/modem	$60/$59
MONITORS	
14" MGC N.I. SVGA monitor, .28 dot pitch, 1280x1024 N.I. VESA stnd	$325/$315
14" MGC SVGA monitor, .39 dot pitch, 1024x768	$230/$225
15" MGC N.I. SVGA monitor, .28 dot pitch, 1280x1024 N.I. VESA stnd	$445/$435
14" SHAMROCK N.I. SVGA monitor, .28 dot pitch, 1024x768 N.I.	$285/$280
14" SHAMROCK SVGA monitor, .28 dot pitch, 1024x768	$255/$250
17" IMPRESSION™ SVGA monitor, .28 dot pitch, flat screen, 1280x1024 N.I. flicker free 72Hz refresh, with digital auto-tracking	$899/$875
FLOPPY & HARD DRIVES	
Teac 1.2MB 5¼" FDD	$60/$57
Teac 1.44MB 3½" FDD	$55/$52
TEAC 2.88MB 3½" FDD	$110/$105
TEAC 2 in 1, 5¼" 1.2MB & 3½" 1.44MB dual half height FDD	$150/$145
170 MB Conner CP-30174 IDE HD (17ms, 64K cache)	$260/$255
130 MB Maxtor MX-7120A IDE HD (15ms, 64K cache)	$235/$230
213 MB Maxtor MX-7213A IDE HD (15ms, 64K cache)	$345/$335
240MB, Maxtor MX-7245A IDE HD (15ms, 256K cache)	$380/$370
340MB, Maxtor LXT-340A IDE HD (13ms)	$560/$545
535MB, Maxtor LXT-535A IDE HD (12ms)	$870/$850
535MB, Maxtor LXT-535S SCSI HD (12ms)	$920/$900
1029MB, Maxtor PO-12S SCSI HD (13ms)	$1425/$1400
1470MB, Maxtor PO-17S SCSI HD (13ms)	$1650/$1620
120MB, Quantum LPS-120 IDE HD (14ms, 256K cache)	$260/$255
170MB, Quantum LPS-170 IDE HD (15ms, 64K cache)	$270/$265

	regular/CASH
240MB, Quantum LPS-245 IDE HD (14ms, 256K cache)	$390/$385
105 MB Seagate 3120A IDE HD (16ms, 32K cache)	$205/$200
250 MB Colorado DJ-20 Tape Backup System	$250/$245
250MB, Archive California 250 Tape Backup System	$210/$205
Sony internal CD-ROM Drive w/interface	$285/$275
PRINTERS	
Hewlett Packard Deskjet 500 InkJet printer	$380/$370
Hewlett Packard DeskJet 550C Color InkJet printer	$700/$680
High capacity print cartridge for HP 500 family	$34/$33
Hewlett Packard Laserjet IIP Plus	$760/$740
Hewlett Packard Laserjet IV	$1375/$1350
OkiData OL 400 laser printer	$595/$590
Panasonic KX-P1123 Printer (24pin/240cps/80col)	$195/$190
Panasonic KX-P2123 Quiet Printer (24pin/240cps/80col/color opt)	$258/$250
Color kit for the above printer	$45/$43
KEYBOARDS	
Acer 6311-G 101 keyboard (click)	$35/$34
Focus 2001 101 keyboard (click, hard dustcover)	$42/$40
KME keymouse 101 keyboard (click, track-ball built-in)	$55/$54
CASES	
Mini-tower case (200w ps)	$55/$53
Mini-deskstop case (200w ps)	$70/$67
Mid-tower case (230w ps)	$80/$76
Full-tower case (250w ps)	$99/$95
MOUSE/TRACKBALL	
Genius mouse (200-1000dpi, opto-mechanical)	$20/$19
TrueBox Trackball (50-800dpi, 3 button)	$35/$33
Microsoft serial mouse	$65/$63
Microsoft bus mouse	$75/$73
Logitech First mouse	$50/$49

PARTS & LABOR WARRANTY!

Note: The above prices do not include CA sales tax and/or shipping and handling charges. They are applicable. Regular prices are subject to change without notice. Cash price reflects discounted price for cash purchase. Above price is subject to change without notice.

INK'N'ART

one *Stop* copy shop

Bring Your Documents in MAC or IBM Format
and Print Them on our Xerox DocuTech
Direct 600 dpi, 106 line screen, 135 copies a minute
Make Signature Booklets, Perfect Bind Manuals and more
Right from the Computer

Open 7 days till Midnight
7550 Sunset Blvd., Hollywood, CA 90046
Tel (213) 8500-INK • Fax (213) 8500-ART

...NOTICE...
ACP's 54th GIANT
COMPUTER
SWAP MEET
Sunday
March 28th, 8-2
Orange County's Original!
FREE Admission and Parking
100's of Sellers 'n Deals
in the Huge Parking Lot
Advanced Computer Products, Inc.
ACP SUPER STORE
Since 1976
1310 E. Edinger
Santa Ana • 714-558-8813
Some Dealer Space Still Available...Call Mary

RESOURCES

Calendar Of Events continued

April 24 Computer Show & Sale. CSUN, North Campus. Richard James Corp. Call: 1-800-433-7469.

April 25 Computer Show & Sale. Scottish Rite Center, San Diego. MarketPro Shows. Call: (415)388-8893.

April 26–29 NCGA '93 Conference: Computer Graphics Solutions—Applications For Implementation. Philadelphia. NCGA. Call: (708)698-9600.

April 27–30 Incotek '92: Exhibition And Conference For Telecommunications And Information Systems. Warsaw, Poland. Global Technologies. Call: Karen Ventimiglia, (202)797-3782.

May 1 Computer Show. Sherman Entertainment Center, Reseda. Computer Marketplace. Call: 1-800-800-5600.

May 2 Computer Show. Sequoia Conference Center, Buena Park. Computer Marketplace. Call: 1-800-800-5600.

May 3–7 DB/EXPO. San Francisco. NDN Enterprises. Call: (415)966-8934.

May 4–6 Digitalk's 10th Annual Developer Conference. Costa Mesa. Digitalk. Call: (310)645-1082.

May 11–13 Computer Storage Exposition And Conference. Anaheim. Kotch & Poliak. Call: (212)486-6186.

May 11–13 SunWorld '93 Conference And Expo. San Francisco. World Expo Corp. Call: 1-800-225-4698.

May 15–16 Computer Show. LA Fairgrounds, Pomona. Computer Marketplace. Call: 1-800-800-5600.

May 25–27 NeXTWORLD Expo And Conference '93. San Francisco. DCI. Call: 1-800-767-2336.

CLASSES, SEMINARS, AND WORKSHOPS

FEBRUARY

February 22–March 16 Lotus 1-2-3 Intensive Class. Monrovia. The Organizers. Call: (818)303-3311.

February 23 Moving Up To Lotus 1-2-3 For Windows Class. Burbank. Unique Learning Centers. Call: (818)843-8119.

February 24–March 18 WordPerfect 5.1 Intensive Class. Monrovia. The Organizers. Call: (818)303-3311.

February 26 Beginning Ami Pro Class. Burbank. Unique Learning Centers. Call: (818)843-8119.

February 27 DOS Class. Monrovia. The Organizers. Call: (818)303-3311.

February 27 Intro To The IBM Class Monrovia. The Organizers. Call: (818)303-3311.

MARCH

March 4–5 Data Communications Class—Understanding The Basics. Los Angeles. Center for Advanced Professional Development. Call: (714)261-0240.

March 7&14 QuickBooks Class. Monrovia. The Organizers. Call: (818)303-3311.

March 9 PC Computer Animation: Art And Graphics Workshop. Glendale. Alpha Computer Systems. Call: (818)241-0810.

March 11 Document Imaging Seminar. Los Angeles. Compulink. Call: (310)212-LINK.

March 13 Intermediate WordPerfect 5.1 Class. Monrovia. The Organizers. Call: (818)303-3311.

March 15–17 Virtual Interface Technology Course. Los Angeles. UCLA Extension. Call: (310)825-1047.

March 18 Document Imaging Seminar. Los Angeles. Compulink. Call: (310)212-LINK.

March 18–19 Optimizing NetWare Class. Los Angeles. Center for Advanced Professional Development. Call: (714)261-0240.

March 19 Implementing Pen-Based Applications For Mobile Workers Seminar. Los Angeles. Slate Corp. and Microsoft. Call: (714)655-1000.

March 20 DOS Class. Monrovia. The Organizers. Call: (818)303-3311.

March 20 Windows 3.1 Class. Monrovia. The Organizers. Call: (818)303-3311.

March 23 Data Entry And Management Workshop. Glendale. Alpha Computer Systems. Call: (818)241-0810.

March 27 Advanced WordPerfect 5.1 Class Monrovia. The Organizers. Call: (818)303-3311.

March 27 Intermediate Lotus Class Monrovia. The Organizers. Call: (818)303-3311.

March 30–31 An Intro To Networking PCs With Novell Class. Los Angeles. Center for Advanced Professional Development. Call: (714)261-0240.

APRIL

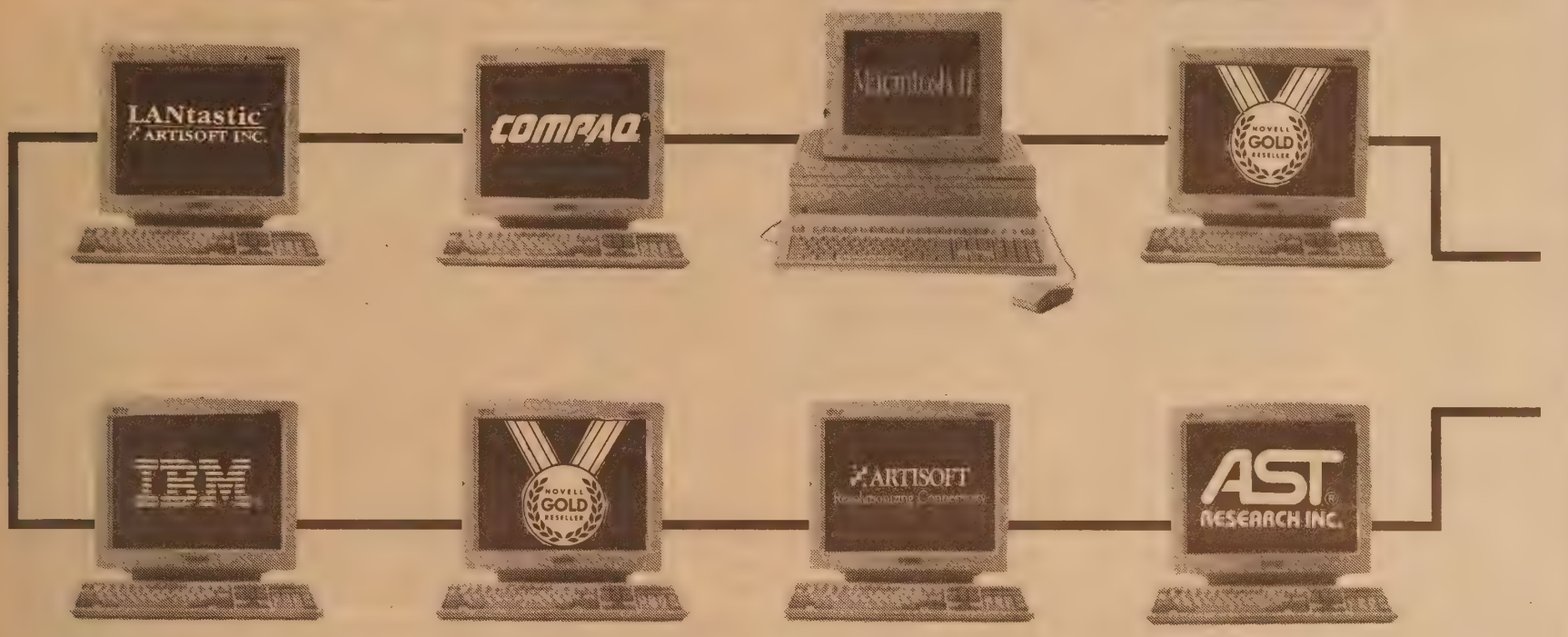
April 3 Excel 4.0 Class. Monrovia. The Organizers. Call: (818)303-3311.

April 17 Advanced Lotus Class. Monrovia. The Organizers. Call: (818)303-3311.

April 17 Word For Windows 2.0 Class Monrovia. The Organizers. Call: (818)303-3311.

Continue

AT UQM WE NETWORK YOU WITH THE BEST.



We're authorized to provide our customers with proven reliability and support through:

Novell Enterprise CNE

- *Name Brand Authorized Dealer*
- Affordability
- Custom Configuration
- 4-8 Hours On-Site/Off-Site Service
- Maintenance Contracts
- Company Leasing Plans
- System Repair & Upgrade

NOVELL GOLD RESELLER

LAN PROFESSIONAL

8/16 Bit ARCNET
ISA and EISA Ethernet
8 or 12 Port Concentrator
ISA and PS/2 Token Ring
Token Ring MAU
Dealers Welcome

SPECIAL DEALER PRICING!

ARTISOFT

AUTHORIZED DEALER

LANtastic v4.1 AI and Novell Lite V 1.0 starter kit: Software for 2PC's

- 8-bit Arcnet Starter Kit $224
- 16-bit Arcnet Starter Kit 282
- 8-bit Ethernet Starter Kit 286
- 16-bit Ethernet Starter Kit 316

• Prices subject to change w/out notice •

UQM COMPUTER

22395 S. Western Ave. Ste. 304 Torrance, CA 90501
(310) 782-1422 FAX (310) 782-1533

HOURS:
Mon-Fri 9:30-6:30
Sat 1:00-5:00

SALES HOTLINE! 1-800-300-1422

USER GROUP NETWORK

BULLETIN BOARDS

RESOURCE LISTING CHANGES

As electronic bulletin boards continue growing, system operators are adding phone lines that include additional area codes. Beginning with issue #100, *MicroTimes* introduced a "Multi-Zone" category for BBSes with access phone numbers in multiple area codes.

Thank you,
MicroTimes staff

MULTI-ZONE

Barter Exchange. (213)871-1304, (805)373-3871, (818)999-1829, (818)879-8547, (818)787-6408. Alternative age 21 and over multiline BBS, adult themes, library, and GIFs. Thurs. nights are for TBE. [Exp. #106.]

Blazin' Bytes BBS. (310)641-4678, (818)776-2784. 8-N-1. Sixteen lines, chat, email, games, sixty pubs/SIGs, great library. Free month. Sysop: Blazin' Barb. [Exp. #107.]

Crystal Palace. (310)472-2598, (818)765-2171. 8-N-1, 24 hrs., 300/1200/2400/9600/14,400. 15GB of GIFs, stories and shareware on CD-ROM, netmail, active msg database, matchmaker, doors, games. Sysop: Daniel Mathis. [Exp. #106.]

Entertainment & Consumers Network. (310)204-6007, (818)784-3039, 888-3942. 8-N-1, 24 hrs., 300/1200/2400. Over fifty consumer and business services available with free trial membership. [Exp. #106.]

Infinite Wisdom North. (213)664-4231, (818)951-2796, 951-6097. 8-N-1, 24 hrs., 1200/2400. Educational science, engineering, online games, doors, chat, offline mail reads. Free trial account. Sysop: Tom Honles. [Exp. #106.]

KBBS Los Angeles. (310)558-0145, (310)532-1700 (818)989-3875. 8-N-1, 300/1200/2400/9600. LA's busiest, with 32,000 channel chat, 13,000+ files, 32 lines, parties, over 3000 members. [Exp. #108.]

LA Online. (310)372-4050, (714)447-0449, 441-0693, (818)577-2131. LA's largest online service. Shopping, events, movies, local news, dining, and more. Free. [Exp. #106.]

Lynzie's Motherboard. (213)650-0519, (310)421-3767, (714)776-4198 (805)520-2300, (818)989-3875. 8-N-1, 24 hrs., 300/1200/2400. 32 lines, multiuser/group & private chats, 2GB, email, public forums, library, and matching. More local numbers available online. Sysop: Celeste Clark. [Exp. #109.]

Modem Butterfly. (213)264-6900, (310)767-1010, (805)581-0700, (714)828-5500, (818)798-9900. 8-N-1, 1200/2400. Instant access, 800MB, SIGs, 33 conference lines, events, trivia contests. [Exp. #107.]

Original Apple Corps BBS. (213)454-4660, (310)454-4660. 300/1200/2400. Apple II support. Free. Sysop: Sheila Dowst. [Exp. #108.]

VVBBS—Valley Village BBS. (213)628-9640, (310)276-9970, (818)763-8160. 8-N-1, 24 hrs., 16,800. 40+ new files every day, great games, friendly sysop. Free trial. [Exp. #108.]

213

The BCS BBS. (213)962-9202. Six lines, thousands of files, email to major networks. One week free when you mention *MicroTimes*. [Exp. #107.]

The Career Network. (213)629-1472. 5 pm–1:30 am, 300/1200/2400. Job hunting. Your resume can reach over 250 major employers each month. Sysop: Steven McCormick. [Exp. #108.]

The Communication-Fax-Link. (213)384-4394. Messages faxed, free, donations accepted. Voice: (213)384-0325. Sysop: Eric Schwartz. [Exp. #107.]

Inner Space BBS. (213)464-4614. 24 hrs., 1200/2400/9600/14,400. Alternate religions, altered states, ecology, metaphysics, new age, occult, UFOs, philosophy. [Exp. #106.]

LAAUGLine. (213)387-1002. 24 hrs., 300/1200/2400. Amiga. Sysop: Thom Irwin. [Exp. #108.]

Twelve Steps BBS. (213)653-7508. 8-N-1, 24 hrs., AA, SAA, OA, NA, ACA, AL-Anon, etc. Free. Sysop: Gene G. [Exp. #108.]

The Westside. (213)933-4050. LA's most active adult system, 70 lines, chat, online games, and more. Free trial for mentioning *MicroTimes*. [Exp. #108.]

310

Amiga Artists Club & BBS. (310)618-0538. 8-N-1, 24 hrs., 300/1200/2400/9600/16,800. UL/DL, 170MB, Art SIGs, Amiga bases, and online games. [Exp. #106.]

Amiga Century BBS. (310)679-2004. 8-N-1, 24 hrs., 1200/2400/9600. Amiga and Toaster forum, news, support, PD software. [Exp. #108.]

Amulet BBS. (310)453-7705. 24 hrs., Specializing in xBASE and cyberspace. Free. Sysop: Dan D. Gutierrez. [Exp. #106.]

The Bad Boy BBS. (310)915-8590. 24 hrs., 300/1200/2400. Ham radio, SWL, scanner info. OCAPS approved. Access first call, free. Sysop: Danny Barker. [Exp. #106.]

Citizen America BBS. (310)453-7564. 8-N-1, 24 hrs., 300/1200/2400. Support for Citizen printers & computers. Sysop: Citizen America. [Exp. #108.]

Close Encounters. (310)947-3997, 902-9538. 24 hrs., 300/1200/2400. Local to many 714, 213, and 818 areas. Multiline social interaction system. [Exp. #107.]

Compu-Net! BBS. (310)823-3609. 300/1200/2400/9600. 1GB, 15 separate systems in one call. Adult, finance, sports, Windows, occult, IBM, and more. [Exp. #108.]

Crazy World. (310)453-5688, 453-2504. 600MB, Amiga user support, member Fido and Clink networks. All amiga nuts welcome. Sysop: Agnius Griskevicius. [Exp. #106.]

Digital Visions. (310)408-0490. 8-N-1, 24 hrs. GIF images, Raytracer programs, Special EFX Animation created by the sysop and users. Free sample files. Sysop: Dion Kraft. [Exp. #106.]

The Downey BBS. (310)806-2226. 2400/9600/14,400. RIME network conferences, Internet/UUCP mail access, DOS software. Sysop: Mark Motley. [Exp. #106.]

Drug Abuse Information (DIAMP). (310)825-3736. 8-N-1, 24 hrs., 300/1200/2400. Drug information, statistics, bibliographies, forums, email, downloads, and uploads. Free membership, reg. requested. Sysop: Greg Cason. [Exp. #108.]

The Great CHR$(27). (310)693-7907. 24 hrs., 1200/2400. 12 Steps, BASIC Programming, C, TECH Talk. No fees. [Exp. #106.]

Kluged—The Anarchist's BBS. (310)432-5305. 8-N-1, 24 hrs., 300/1200/2400. Open to anything. Shareware, games, programs, graphics, and message base. Free. Sysop: Martin. [Exp.

Continued

FREE-ACCESS

Only LA ONLINE gives you free access to movie times, electronic editions of newspapers, calendars of events and on-line shopping. And now, on-line forums too!

This Christmas, try the **LA ONLINE shopping mall**. With over 20,000 items including computers & accessories, music CDs, clothing, corporate gifts, flowers, exotic foods, fine wines & more... you'll love it!

By the way, our graphics communications software makes a great gift too. Call for details.

FOR ACCESS
South Bay 310-372-4050
Westside 310-441-0693
Pasadena 818-577-2131
Pasadena 818-577-2898
Orange County 714-447-0449
VOICE: 310-372-9364.
LA ONLINE
Member of the Free World

Amateur Action BBS

Amateur Adult GIF Files!
Over 12,000 files on line!!
New Member Bonus!!
FREE Amateur Video!!

VISA MasterCard

(408) 263-3393

8 Lines
US Robotics Dual Standard
Modem 1200/2400/9600
V.32/14400 HST

BBS SPOTLIGHT

By John Wolcott

GETTING ONLINE IN L.A.

LA On-line is a refreshingly different choice among the ordinarily ordinary BBS offerings. It amounts to a network of businesses providing an assortment of information. News, shopping, movie listings, free private party ads, opinion forums, astrological forecasts, and a dating database featuring pictures of your "date-to-be" make LA On-line an information source of value. You may even be able to use the system to find a job, or purchase a home.

The Director of LA On-Line, David Silverberg, is dedicated to providing a useful information service with continual system expansion. David commented, "Users deserve an information service that is easy to use, powerful, informative, and entertaining."

Straying from the beaten path of traditional subscription BBS services, there is no regular subscription fee and it can be accessed with any regular terminal software. Here's the catch. To fully appreciate the featured graphic format, the LA On-line software program is required. This program allows display of the entertaining graphic images imbedded in menu selection screens as well as the pictures in the dating database. The LA-On-line program is available from dealers throughout the Greater Los Angeles area for a mere $12.95 with no other fees attached to their services. They are supported financially through their advertisers. What a deal!

Logging on has no mandatory registration procedure or passwords. Immediately displayed are current events and features followed by the main menu. The main menu allows numerical choice of information categories. You may also "jump" to different areas of the service with "GO" commands. Any fear or confusion about getting around in the system is dispelled with online help.

Just browsing through the information listings available is entertaining. Current information for your social calendar is a few key-strokes away. Are you ready for an evening out but not sure where to go? You're sure to find something that will strike your fancy; maybe dinner and a movie or a jazz club. It's all there.

Pick the geographic area you'd consider going to and the type of cuisine you have a taste for. The rest is easy. Movie listings offer theater locations, shows, and times. Are you looking for a nightclub? Select the types of clubs you're most interested in and you'll see plenty of suggestions.

The only features missing from the LA On-line software program are screen text capture and mouse support. If you don't require the graphical capabilities offered by the software, your favorite terminal program may do a better job.

Currently, information provided on the system is directed toward the Los Angeles area with some Long Beach listings. Expansion to include Orange County is promised to be coming soon.

LA On-line has local access numbers for most of the Southland. You can reach LA On-line by calling (310)372-4050 or (310)372-0293 at 2400 baud, no parity, 8 data bits and 1 stop bit. Once you're connected, you may view other access numbers to see if there's something more local.

LA On-line offers information for your social pleasure without digging through three sections of two different newspapers. It's a pleasing way to access your entertainment and shopping needs.

STOP THE WASTE ! START RECYCLING !

In an effort to reduce the amount of plastic wastes entering our landfills, computer retailer Micro City has announced their plans to act as a drop-off point for people wanting to recycle their Hewlett-Packard laser printer toner cartridges. When a customer has an empty Hewlett-Packard toner cartridge to be replaced, they just need to take it to their local Micro City location. In return, they will receive a $5 discount on the purchase of their new toner cartridge, and the knowledge that their old cartridge isn't taking up landfill space. Micro City will send all used toner cartridges back to Hewlett-Packard, where they will be completely disassembled. Some of the parts are recycled to manufacture new cartridges, while other parts are melted down for reuse as raw materials. In addition, for every return, Hewlett-Packard will donate $1 to The National Wildlife Federation and The Nature Conservancy. Instead of throwing out your used toner cartridges, bring them to Micro City. By working together, we can all stop the waste.

MICRO CITY SM
COMPUTER SUPERSTORE

VAN NUYS	SANTA ANA	CERRITOS	SAN JUAN CAPISTRANO
(818) 781-0698	(714) 543-4922	(714) 739-0444	(714) 489-0226

THE MICROTIMES CORPORATE BUYER HAS AN AVERAGE BUDGET OF $43,870 TO SPEND ON COMPUTER PRODUCTS IN THE NEXT 12 MONTHS

Source: Beta Research West, Inc

For Advertising Information Call:
510-934-3700
408-244-4400
213-851-8600
714-939-2809

#106.]

LA Computer Society BBS. (310)475-8720. 8-N-1, 24 hrs., 2400 only. Full access to Computer Society members ($36/yr), message bases, SIGs, and club information. Sysop: Debbie Rhodes. [Exp. #108.]

La Mirada's The Modems Delight BBS. (310)944-1221. 24 hrs., 300/1200/2400/9600. Multi-interest files, doors, games, and fun. Running Telegrad BBS v2.7, BlueWave Echo-mail, 1:102/430 Fidonet. Sysop: Ronald Dishon. [Exp. #108.]

LAMG (Los Angeles Macintosh Group). (310)559-MACS. 8-N-1, 24 hrs, 300/1200/2400/9600/14,400. So. Cal's busiest all Mac multiline BBS. 300MB of Mac news, reviews, rumors, and more. [Exp. #106.]

modemBoy. (310)659-7000. 8-N-1, 300/1200/2400. Serving the gay community, instant access. [Exp. #107.]

Music BBS
24 Hours a Day
818-789-4287

MERCHANTS OF WONDER
Games, Chat Channels
5000+ Files & GIF's
Forums, FREE Trial!
East Valley/Downtown
(818)759-0060 ◆ 2400/N81
West Valley/Simi/Newhall
(818)709-5638 ◆ 2400/N81
9600/14.4Kbaud Line
(818)759-0097

CARLIQUE GRAPHICS
WORLD FAMOUS GIF'S
ADULT CD'S
FREE CATALOGS
SUBSCRIBE ON-LINE
MasterCard VISA AMEX
408-847-0665

Music Network USA. (310)312-8753. Midi software, industry seminar, songwriters workshop, musicians referral service, and more. [Exp. #106.]

One World. (310)372-0987. 8-N-1, 300/1200/2400/9600/14,400. Ecology, gardening, health, alt. news, int'l network. Free. [Exp. #106.]

The original off off-broadway BBS. (310)453-7038. 8-N-1, 24 hrs., 300/1200/2400/9600. Non-subscription, text files/messages only. Using MajorBBS software and CompuCom Speedmodem. Sysop: James Gossage. [Exp. #106.]

Paradise Cove BBS. (310)421-4788. 24 hrs., 1200/9600/14,400. Hot new BBS! multiuser/group & private chats, over 3GB, public forums, matching. Free (for a limited time). [Exp. #106.]

Quadrature Peripherals BBS. (310)327-7042. 1200/2400. Digitized video, D/L GIFs and shareware. No fee. Sysop: Slash. [Exp. #106.]

Servant Christian BBS. (310)371-2770. 1200–16,800. Christian information and programs for the Mac and PC, extensive transfer, instant access. Free. Sysop: Douglas Wade. [Exp. #106.]

South Bay Commodore Users Group (SBCUG). (310)643-8818. 24 hrs., 300/1200/2400. Graphics and library. Sysop: Jeffery Baldwin. [Exp. #106.]

Tasmania BBS. (310)437-8460. 8-N-1, 300/1200/2400. Programming, software troubleshooting, downloadable source code. InfiNet node 34, WWIV 4.22. Free. Sysop: The Tasmanian Devil. [Exp. #108.]

INTELOG
17 Nodes BBS
OS2 ◦ DOS ◦ Windows
Graphic Images
Internet ◦ Usenet
Rime ◦ ILink Email
(408) 655-1096 2400 bps
(408) 655-8294 v.32bis
(408) 655-8297USR HST
American Express Cards
MasterCard VISA
Register Online

AUTOCOMP Computer Classifieds
Logon with any computer 24 Hrs a day.
Find the automobile your looking for, fast and easy!
• FREE Public Access
• One Key Logon
• Enter Your Own Classified Ads
Main Modem Number 818-767-8087

619

Satang BBS. (619)364-0033. 8-N-1, 24 hrs., 300/1200/2400. 170MB online, Wildcat! IBM files & programs, religion and metaphysics. Sysop: Ed Shimko. [Exp. #106.]

714

Alpha/Net BBS. (714)830-0402 (14,400), 830-0311 (16,800). 24 hrs. Multi-node chat, Windows, games, comm., adult. Local echo mail. No ratio, free access. Sysop: Jamie Wilson. [Exp. #108.]

Amazon's Arena BBS. (714)840-1145. 1200/2400/9600/14,400. Specializing in GIFs and stories about Amazonically proportioned women. Sysop: Jim Woodard. [Exp. #107.]

The Black Crystal BBS. (714)638-3581. 24 hrs., 1200/2400/9600/14,400. Online games, shareware, GIF files. Sysop: Larry Tournay & Chris Wilson. [Exp. #106.]

Buffy's Place BBS. (714)558-9502, 996-1014, 435-0294, 636-8606. 8-N-1, 300/1200/2400. Orange Co.'s most exciting adult BBS. Open forum, free trial membership, email, social events, and more. [Exp. #108.]

The Central Office Public Data eXchange. (714)840-2437. 24 hrs., 300–14,400. Telecommunications, off-highway vehicles, Baja California/Mexico. Three BBSes in one, each independent. [Exp. #106.]

Commodore Automated Terminal BBS. (714)979-8333. Serving C/64 & 128 computers. Help files, email, up/downloading, no fee. [Exp. #107.]

Commodore Computing. (714)673-2185. 8-N-1, 24 hrs., 300/1200/2400. 64/128. Tech support and games. No reg fee. Sysop: Stephen Fabre. [Exp. #108.]

Diaspar Virtual Reality Network. (714)831-9101 (2400), 362-9995 (9600). Home EduTainment Center, 20+ lines, experience virtual reality. Sysop: David Mitchell. [Exp. #106.]

The Drop Zone! BBS. (714)245-3854. Games, utilities, adult GIFs, nationwide echo-net, 1.2GB online. Reg required. Sysop: Rick Simmons. [Exp. #106.]

Easy Street. (714)590-4307, 778-5473. 8-N-1, 24 hrs., 300/1200/2400/9600. 20,000+ files, adult fun, 42 lines w/local access throughout Orange County. [Exp. #106.]

The Hotline BBS. (714)857-0233, 256-8672. 8-N-1, 24 hrs., 300/1200/2400. PD software, matchmaking, 16 chat lines, social events. Sysop: John Coon. [Exp. #107.]

Infinity BBS. (714)379-1335. 20 lines, 4GB file library w/adult GIFs, teleconference, email, games, Fidonet, and current weather. Sysop: Eric Robitaille. [Exp. #108.]

The Master Connection BBS. (714)651-9815. 24 hrs., 1200/2400/9600. Lots of games, utilities, graphics. No fee. Sysop: Mark Duvall, Jr. [Exp. #106.]

Midnight Mission BBS. (714)848-6808. 8-N-1, 24 hrs., 1200/2400/9600/14,400. Large game and GIF file areas. Full access with call back. Sysop: Marty Strech. [Exp. #108.]

Online Exchange. (714)870-4614. 2400–14,400. Shareware, large adult GIF file area, games, 2.5GB online. Sysop: Bob Aune. [Exp. #108.]

PC-Applications BBS. (714)432-9104, 557-8351, 557-6688. 24 hrs., 1200–14,400. Online games, email, echo-mail, over 300 conferences. Full access on first call with call back verifier. Sysop: Dave Robinson. [Exp. #106.]

The PC Sports Connection. (714)533-6728. 8-N-1, 24 hrs., 300/1200/2400. Using Searchlight for unique games, fantasy leagues, and sports talk. Sysop: Keith Jefferson. [Exp. #107.]

Sherlocktron. (714)492-0724. 8-N-1, 24 hrs., 2400. Sherlock Holmes BBS with lists of societies, publications, and purveyors. Sysop: Willis G. Frick. [Exp. #106.]

SOCCC BBS. (714)373-0964. 24 hrs. Public domain & shareware for IBM, Apple & CP/M. Sysop: Brian A. Fliege. [Exp. #106.]

Trixie's Doghouse. (714)499-2864. 8-N-1, 24 hrs., 300/1200/2400/9600/14,400. Specializing in topics related to pets. Full access with callback. Sysop: Jason MacDonald. [Exp. #107.]

Viewlink BBS. (714)650-4612. 24 hrs., 1200/2400/9600. Singles dating service featuring GIF pictures. Marketplace with GIFs of items for sale. Sysop: Terry Andrews. [Exp. #106.]

WinSIG BBS. (714)363-9802. 24 hrs., Windows 3.xx shareware. Sysop: Firas Bushnaq. [Exp. #108.]

805

The Brainstorm BBS. (805)584-6088. Multiline, online games, file library, dating, chat. [Exp. #106.]

The Farpoint BBS. (805)582-1621. 1200/2400/9600/14,400. IBM files, GIFs, WILDnet, THROBnet, SwingNET. Member of United Sysops Assoc. Sysop: Gary Bisner. [Exp. #107.]

Mount Olympus BBS. (805)297-5787. 24 hrs., 2400–38,400. Adult (21+), 1GB of high-quality adult-only files. No post-to-call ratio. New users get five days free d/l's. [Exp. #107.]

818

24th Century BBS. (818)305-8300, 568-9259, 558-1176, 986-2872, 8-N-1, 24 hrs., 300/1200/2400. Multiline, chat, email, SIGs, databases, new user help. One month free. Sysop: DragonSeed. [Exp. #108.]

AABBS (Asia America BBS). (818)284-4519. 24 hrs., 300/1200/2400/9600/14,400. Specialize in bridging the gap between Asian and American cultures, with a special focus on business. [Exp. #107.]

African American BBS! (818)793-9155. P-Funk online, sports, issues, health, business. Check it out. Free. Sysop: Jeffery Mitchell. [Exp. #107.]

Americom. (818)967-3108. 10 pm–8 am. Laserdisc! Video, file, radio communications, soundtrack info, and the arts. Using standard QWK offline mail system. [Exp. #107.]

Atlantis, The Lost BBS. (818)859-6300. 2400/9600/14,400. Multiline chat, games, travel, scuba, forums, SIGs. Grand opening specials. Sysop: Ron DeRuyter. [Exp. #108.]

Aussie BBS. (818)337-9701. 8-N-1. 10 lines, chat, games, high-quality adult GIFs, 18,000 files. Sysop: Mike Szabados. [Exp. #106.]

AutoComp. (818)767-8087. 300/1200/2400/14,400. Automotive classifieds with photos. Free access, one key logon. Sysop: J. Macoy. [Exp. #108.]

Bad-Boy's BBS. (818)846-9304. 24 hrs., 2400–16,800. Fido 1:102/842. 54+ online games, CD-ROM, No fees. Sysop: Brandon L. Heess. [Exp. #108.]

The Rogue's Guild. (818)347-4291. 16,800. Fidonet, lrg file and message sections. US Robotics Dual Standard 16.8K. [Exp. #106.]

Chatterbox! BBS. (818)995-6959. 8-N-1, 24 hrs., 2400/9600/14,400. All adult, GIFs, shareware, freeware, multiline chat, library, games, and CD-ROMs. Sysop: Don Adler. [Exp. #106.]

The Drawing Board. (818)965-6241. 8-N-1, 24 hrs., 1200/2400/9600. DTP, graphics, messages, and PD file sections. Sysop: Char Rice. [Exp. #108.]

Gifshopper BBS. (818)989-0975. 2400/9600/14,400. An adult-oriented BBS featuring The Giffshoppe Goodies Collection with over 4.5GB online. Sysop: Dan Bauer. [Exp. #106.]

Hottips BBS, Glendale. (818)248-3088, 1200–14,400. Five lines, 6000+ files, 1000+ users, 1GB online, QWK mail door, professional emphasis. RIME Network. Sysop: Michael D. Callaghan. [Exp. #108.]

Infinite Wisdom North. (818)951-2796, 951-6097. 8-N-1, 24 hrs., 1200/2400. Educational, science, engineering, online games, doors, chat, offline mail reads. Free trial account. Sysop: Tom Honles. [Exp. #108.]

INFOmania BBS. (818)791-8680. 8-N-1, 24 hrs., 300–14,400. Fidonet, Racenet, and Business-net conferences, DOS utilities. Free access on first call. [Exp. #107.]

MUSO-BBS. (818)884-6799. 9600. Musician and music industry oriented BBS. Discussion forums, files, talent database. Sysop: Myles Wakeham. [Exp. #108.]

Mysteria. (818)353-8891. 300–14,400. Metaphysics and general. Fidonet. Free. Sysop: Phil Hansford. [Exp. #106.]

PC Solutions BBS. (818)776-2397. 9600. Fidonet, all the latest warez, games, utils. Free. [Exp. #106.]

Sahara Club. (818)893-1899. 8-N-1, 16,800. Off-road, timber, guns, and more. Fidonet, free. Sysop: Patrick Martin. [Exp. #108.]

Software Bank. (818)993-5516. 2400/9600/14,400. OS/2, Windows, Star Trek Fidonet echos, QWK mail, 13,000 files for D/L. Free. [Exp. #108.]

Southland Matchmaker. (818)793-9108. Pen-pal system, multilines, chat, games. Enter "mm" at login prompt. [Exp. #106.]

Tin Shack BBS. (818)992-3321. Over 1.5GB of files. Local numbers available. Sysop: Guy Nohrenberg. [Exp. #108.]

Tri-City Apple BBS. (818)288-6540. 8-N-1, 24 hrs., 2400. Mostly Apple II, email, PD, UL/DL. [Exp. #106.]

Valley Apple Computer BBS. (818)782-6471. 300/1200/2400. Friendly to beginners, uploading and downloading Apple II only. [Exp. #106.]

Wizardry BBS. (818)222-4444. 1200/4800/9600/14,400. Chat, games, U/L, D/L, mulitline. Free. [Exp. #107.]

909

The Digital Publishing BBS. (909)861-0250. 300/1200/2400/9600/14,400. Online publishing, programs, files. 386BSD, OS/2, Windows, DOS. [Exp. #108.]

916

Video ViSion BBS. (916)682-1655. 24 hrs., 300/1200/2400/9600. Games, graphics, Windows & source code. 360MB. Sysop: Roel Sarceno. [Exp. #107.]

continued on page 159

MEMORY • MEMORY • MEMORY • MEMORY • MEMORY • MEMORY

DELL • EPSON • CANON • COMPAQ • DEC

ACER • ALR • APPLE • AST • AT&T • DE

PANASONIC • POQET • SAMSUNG • SHARP • SUN • TANDON • TI • TOSHIBA • ZENITH

INTERNATIONAL PRODUCTS MANUFACTURER

IPM SYSTEM SINCE 1984

"We Will Beat/Match ANY Advertised Price!"

SUPER LOW PRICE!

COMPUTER PRICE WAR

HAS BEEN LAUNCHED BY

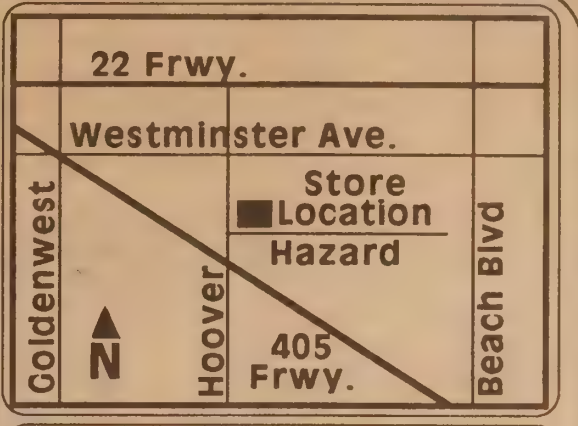
KATRONIC TECHNOLOGY

COMPUTER SALES & SERVICES

WE DELIVER ADVANCED TECHNOLOGY

Excellent Quality • Reliable Service

Competitive Prices



"WE WILL CUSTOMIZE ANY SYSTEM TO MEET YOUR SPECIFICATIONS."

UPGRADE

ALL BRAND NAME SYSTEMS TO CYRIX

CX486-25/33MHz

- Fully Intel 486 Compatible
- Require No Slot
- Fits To All Machines
- Takes Only 5 Minutes To Install
- Over 450% Speed Improvement

286 To 486-25MHz . . $430

386 To 486-33MHz . . $520

DEPOT REPAIR SPECIALIST

FAST TURNAROUND

- FLOPPY DISK DRIVES FOR MAC/PS2/COMPAQ/TOSHIBA
- All System Power Supplies
- Monitors
- Printers

LOW PRICE! LARGE QUANTITY DISCOUNTS!!

ALL REPAIRS ARE WARRANTED FOR A FULL 90 DAYS

NOTEBOOK SPECIAL

386SX-25 MHz w/2 MB + 80 MB H. Disk **LOWEST PRICE—CALL!**

HARD DRIVES • MODEM
MONITORS • PRINTERS
COLORADO DRIVE

CALL

IPM CYRIX

CX486-25MHz/ AMD 386-40MHz

- Medium Tower Case w/Double Fans
- 230W Power Supply
- MB Cyrix 486-25MHz Or 386-40MHz
- 4MB RAM, 128K Cache
- 5.25" And 3.5" Diskette Drivers
- FDD/HDD Controller + I/O
- 80MB 15ms IDE Hard Drive
- 3 Buttons Mouse
- SVGA 16 Bit w/1MB RAM
- 14" SVGA Monitor .28dp
- 101 Key Maxi Keyboard

CX486-25MHz

w/387 Math-Co $1239

AMD 386-40MHz $1099

MEMORY UPGRADE FOR LAPTOP • NOTEBOOK • PALMTOP • IBM PS/2

IPM

486DX-33/50/60MHz

$1499/$1669/$1780

- Medium Tower Case w/Double Fans
- 230W Power Supply
- MB 486DX-33/50/66MHz w/256K Cache
- 4MB RAM
- 5.25" And 3.5" Diskette Drivers
- FDD/HDD Controller + I/O
- 170MB 15ms IDE Hard Drive
- 3 Buttons Mouse
- SVGA 32 Bit w/1MB RAM
- 14" Non-Interlaced SVGA Monitor
- 101 Key Maxi Keyboard
- VESA Local Bus

intel inside

VESA LOCAL BUS

UPGRADE CLONE SYSTEM

Replace The Motherboard + CPU + Memory

XT To 286

w/1 MB $119

286 To 386DX-40 MHz

w/1 MB $225

286 To 486-33 MHz

w/1 MB $520

FREE LABOR!

HEWLETT PACKARD · Canon · TOSHIBA · TI • NCR • SUN • AT&T • OKI · EVEREX · EPSON · ZEOS · IBM · ATi · NEC · DELL COMPUTER CORPORATION · RICOH · ZENITH · Microsoft · COMPAQ · Panasonic · PACKARD BELL · SHARP · ALR · OKIDATA · AST

KATRONIC COMPANY

(714) 897-3234 or (714) 895-2084

FAX: (714) 897-9853

14382 HOOVER ST., SUITE A9, WESTMINSTER, CA 92683

ONE YEAR WARRANTY PARTS & LABOR

MasterCard · VISA

EVEREX • FUJITSU • HP • IBM • NCR • NEC • OKI

CALIFORNIA COMPUTER SYSTEMS

World-Class Portable Power From CCS !!

LABOR AND PARTS WARRANTY 1 YEAR CCS

NP-206C

486DX-33 MHz

COLOR

- 4MB RAM ,EXP. to 16MB, 8K Cache Memory
- 120MB HD (80,200 or 240MB optional)
- 3.5" 1.44MB Floppy Drive
- 10" Color/8.5 Mono LCD Passive 640 x 480
- Ext. Numeric Key Pad Included
- Rechangeable Ni-Cad Battery
- 81-Key Keyboard
- Build-in Trackball Mouse (Color Only)
- 2 Serial and 1 Parallel, External Ports for VGA, 101-Keyboard, AT Bus port for Docking Station
- Numeric Keypad, 11"W x 8.6"D x 2"H
- Carrying Bag & AC/DC Adapter

NP-206M, 486DX-33, 4/120MB $1945
NP-209M, 486DX2-50, 4/120MB $2175

$ 91.00 Per Month

$2945

NP-305

486DX-33 MHz

- 4MB RAM on board expandable to 8MB
- 120MB HD (120/200MB optional)
- 3.5" 1.44MB Floppy Drive
- 10" Mono LCD VGA 640 x 480, 64 grays
- Super Longlife Battery
- 1 Serial and 1 Parellel Port
- Poats for VGA mon., keyboard & 5.25" drive
- 86-Key Keyboard
- Carrying Bag & AC/DC Adapter
- Weight 7 lbs with Battery
- 12.2"W x 9.5"D x 1.7-2.1" H

$ 69.00 Per Month

$2095

NP-525C

486SLC-25 MHz

COLOR

- 4MB on board expandable to 8MB
- 80MB HD,(120/200MB optional)
- 3.5" 1.44MB Floppy Drive
- 9" Color LCD Passive VGA
- 10" Mono LCD VGA 640 x 480, 64 grays
- Simultaneous CRT & LCD Operation
- Built-in Trackball
- Lightweight 5.7 lbs.
- 1 Serial, 1 Parallel, Docking Station Port
- Exter. VGA Monitor, Keyboard Port
- Weight 5.7 lbs with Battery
- Carrying Bag & AC/DC Adaptor

$ 74.00/ $ 59.00 Per Month

$2290COLOR $1635MONO

NP-204/201

486SLC/386SXL-25 MHz

- 4MB Standard Expandable to 8MB (NP-204)
- 2MB Standard Expandable to 5MB (NP-201)
- 80MB HD (NP-204)
- 60MB HD (NP-201)
- 3.5" 1.44MB Floppy Drive
- 640 x 480 LCD VGA Monitor
- Rechangeable Ni-Cad Battery
- 86-Key with 12 Function Keys
- 1Serial and 1 Parallel Port, 1PS/2 Mouse Part
- Option for INT. Fax/Modem
- 11"W x 8.4"D x 1.8"H
- Carrying Bag & A/C Adapter

$51.00/$ 42.00 Per Month

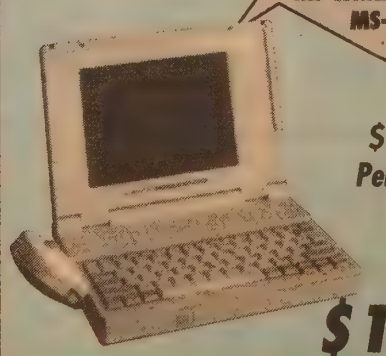
$1445NP-204 $1175 NP-201

Canon INNOVA 386NX Notebook

- 386SXL-25 MHz CPU
- 60MB HD (120/200MB optional)
- 3.5" 1.44MB Floppy Drive
- 10" Mono LCD VGA 640 x 480, 64 grays Simultaneous Dispaly (800x600 16 Color)
- Super Longlife Battery 4-6 Hours
- Fax/Modem (9600/4800, Send/Receive)
- 1 Serial, 1 Parellel, VGA and keyboard Port
- 82/83-Key Keyboard
- Logitech Trackman Mouse
- Weight 5.3 lbs with Battery
- 11.4" W x 8.7" D x 1.5" H

Pre-installed Software
MS-Works for Windows
MS-Windows V3.1
MS-DOS V5.0
Win-Fax

$ 55.00 Per Month



$1545

Canon Bubble Jet BJ-10EX Plain Paper Portable Inkjet Printer

- Manual Feed
- 142 Characters/ Second
- 360 DPI > 6.6 lbs.
- 37 KB Buffer
- Epson/IBM Emulation
- Laser Quality Text & Graphics

w/Notebook Purchase Only ***$240***

Ask Our 90 Day Same as Cash Financing Program

CALIFORNIA COMPUTER SYSTEMS

Quality, Savings, Service... Directly from Manufacturer

AMREL 486

Upgradeable Workstation Notebooks.

ADD IT ALL UP...

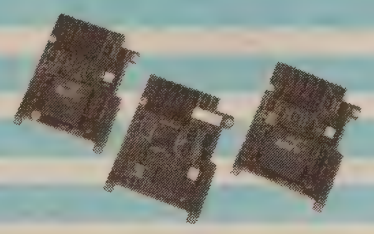
- IMMEDIATE SHIPPING
- ONE FULL YEAR PARTS & LABOR WARRANTY
- 48-HOUR SERVICE TURNAROUND TIME

AMREL Docking Station

AMREL Docking Station delivers the power and expandability of desktop PCs to your MLT486. Features include two 16-bit ISA slots, internal Fax/Modem, RS232 port, parallel port, SVGA, external keyboard port and room for a 5 1/4" drive.

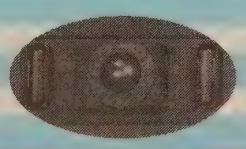
AMREL CPU Modules

AMREL MLT486 Notebook computers feature state-of-the-art plug in CPU Modules for fast and economical processor upgrades. Increase your computing power by simply replacing the AMREL CPU Modules. CPU Options include 386DXL33, 486DX-33, 486SX-25, 486DX2-50 & 486DX2-66 MHz.



AMREL Trackball

Convenient built-in trackball eliminates the need for awkward add-on devices.



MLT486 SLC-25

- 486SLC-25MHz
- 4 MB EXPANDABLE TO 16MB(SXU) / 8MB(SLC)
- LIM EMS 4.0 SUPPORT
- 8KB(SXU)/1KB (SLC) CACHE STANDARD
- 80MB HARD DRIVE

Removable Hard Drive

$ 1650 $62.00 Per month

MLT486DXU-33

- 80486DX-33MHz
- UPGRADEABLE TO 486DX2-50 OR HIGHER
- 4 MB EXPANDABLE TO 16MB
- LIM EMS 4.0 SUPPORT
- 8 KB STANDARD CACHE, 128KB OPTIONAL
- 130 MB HARD DRIVE

$ 2295 $75.00 Per month

MLT486DX2-50

- 80486DX2-50MHz
- UPGRADEABLE TO HIGHER SPEED 486DX
- 4 MB EXPANDABLE TO 16MB
- LIM EMS 4.0 SUPPORT
- 8 KB STANDARD CACHE, 128KB OPTIONAL
- 130 MB HARD DRIVE
- 96/2400 INT FAX /MODEM

$ 2795 $89.00 Per month

MLT486DX2-66

- 80486DX2-66MHz
- 4 MB EXPANDABLE TO 16MB
- LIM EMS 4.0 SUPPORT
- 8 KB STANDARD CACHE, 128KB OPTIONAL
- 200 MB HARD DRIVE
- 96/2400 INT FAX /MODEM

$ 3295 $99.00 Per month

■ SECURITY

PASSWORD SECURITY BUILT INTO BIOS

■ POWER MANAGEMENT

INTELLIGENT POWER SAVING UTILITIES
SUSPEND/RESUME FUNCTION

LABOR AND PARTS WARRANTY 1 YEAR CCS

■ STORAGE

ONE 3 1/2" 1.44MB FLOPPY DISK DRIVE
ONE 60MB, 80MB , 120MB, OR 200MB HARD DISK DRIVE

■ DISPLAY

10" BLACK/WHITE SUPERTWIST BACKLIT DISPLAY; ADJUSTABLE BRIGHTNESS AND CONTRAST, 640 X 480 RESOLUTION, VGA COMPATIBLE
64 SHADES OF GREY, 80 CHARACTERS X 25 LINES SIMULTANEOUS
EXTERNAL COLOR SVGA

■ KEYBOARD

85/86 STANDARD SPACED KEYBOARD WITH INVERTED-T CURSOR & DEDICATED PAGE KEYS.

■ INTERFACE

INTEGRATED MOUSE (MICRO TRACKBALL)
RS-232C SERIAL PORT, PRINTER PORT, EXTERNAL MONITOR PORT, EXTERNAL KEYBOARD PORT, DOCKING STATION , FAX/MODEMINTERFACE

■ POWER

AUTO SENSING 110V/240VAC, 50-60HZ, NI-CAD RECHARGEABLE BATTERY PACK WITH 3-HOUR OPERATION, LOW BATTERY WARNING AND SHUT DOWN

■ DIMENSIONS

(11.6" X 8.7" X 2.3) 294 X 220 X 58 mm " W X D X H, WEIGHT; 7 lbs (3.2 kgs.)

■ STANDARD BUNDLE

UNIVERSAL AC/DC ADAPTOR, ONE BATTERY, DELUX CARRYING BAG
EXTERNAL KEYBOARD ADAPTOR, UTILITY DISK, BUILD-IN TRACKBALL MOUSE, AUTO SUSPEND BUTTON

■ OPTIONS

- ✔ 4, 8, 16 MB MEMORY MODULE
- ✔ 128 KB CACHE MEMORY
- ✔ 486DX/486DX2 UPGRADE KIT
- ✔ INTERNAL FAX (9600 BAUD)/MODEM CARD (2400 BAUD) /MNP5 WITH 2-WAY TRANSMISSION (SEND & RECEIVE)
- ✔ EXTERNAL FLOPPY DISK DRIVE (TO BE USED WITH DOCKING STATION ONLY)
- ✔ EXTERNAL 101/102-KEY KEYBOARD
- ✔ DOCKING STATION(2 SLOTS FOR IBM-AT COMPATIBLE CARDS, HIGHER RESOLUTION VGA CARD SUPPORT,5.25" DRIVE BASE)

Ask Our 90 Day Same as Cash Financing Program

CALIFORNIA COMPUTER SYSTEMS

Innovation for Better Value...

LABOR AND PARTS WARRANTY 1 YEAR CCS

VESA LOCAL BUS 486DX-33MHz

W/2 VESA LOCAL BUS SLOTS

- 486 33MHz Processor w/math-co
- 256K cache
- 4MB RAM up to 32 MB on board
- 1.2MB & 1.44MB Floppy Drives
- 120MB Hard disk
- VESA 32 Bit IDE Card w/2 Serial, 1 Parallel, 1 Game
- VESA 32 Bit Local Bus SVGA card w/1MB
- Tatung 14" 1024x768 .28 dot color Monitor
- 101 key Enhanced Keyboard

$ 1595 $58.00 Per Month

486DX-50MHz /DX2-66MHz

- 486 50MHz Processor w/math-co
- 256K cache
- 4MB RAM up to 32 MB on board
- 1.2MB & 1.44MB Floppy Drives
- 120MB Hard disk
- IDE Card w/2 Serial, 1 Parallel, 1 Game
- SVGA card 16 bit w/1MB
- Tatung 14" 1024x768 .28 dot color Monitor
- 101 key Enhanced Keyboard

$ 1535/1675 $55/57.00 Per Month

486DX-33MHz

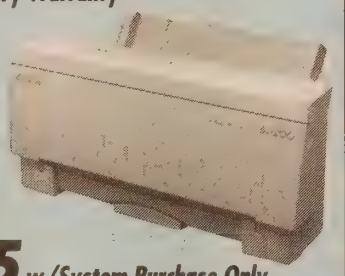
- 486DX-33 MHz Processor
- 64K cache
- 4MB RAM up to 32 MB on board
- 1.2MB & 1.44MB Floppy Drive
- 120MB Hard disk
- IDE Card w/2 Serial, 1 Parallel, 1 Game
- SVGA card 16 bit w/1MB
- Tatung 14" 1024x768 .28 dot color Monitor
- 101 key Enhanced Keyboard

$ 1370 $49.00 Per Month

Canon BJ-200

Laser Quality Bubble Jet Price

- 4 Page Per Min., 360 DPI Resolution
- 100 Sheets or 10 Envelopes
- EPSON & IBM Emulation
- 49KB Buffer, Weight 6.6 lbs.
- 2 Year Factory Warranty



$ 325 w/System Purchase Only

486SX-25MHz

- 486SX 25MHz Processor
- 64K cache
- 4MB RAM up to 32 MB on board
- 1.2MB & 1.44MB Floppy Drive
- 120MB Hard disk
- IDE Card w/2 Serial, 1 Parallel, 1 Game
- SVGA card 16 bit w/1MB
- Tatung 14" 1024x768 .28 dot color Monitor
- 101 key Enhanced Keyboard

$ 1090 $40.00 Per Month

386DX-40MHz

- 386DX 40MHz Processor
- 64K cache
- 4MB RAM up to 32 MB on board
- 1.2MB & 1.44MB Floppy Drive
- 80MB Hard disk
- IDE Card w/2 Serial, 1 Parallel, 1 Game
- SVGA card 16 bit w/1MB
- Tatung 14" 1024x768 .28 dot color Monitor
- 101 key Enhanced Keyboard

$ 1025 $39.00 Per Month

MULTI-MEDIA SIDE

Sound Blaster Pro with 2 Title	$199.00
Sound Blaster Pro (Basic)	$179.00
Pro Audio Spetram 16 bit	$235.00
8 bit sound Card	$ 99.00
NEC Portable CD-ROM	$468.00
CD-ROM Bundle	$535.00
-Sound Blaster Pro, 5 CD Titles, Utilities, Mini-Speakers	
Parallel to SCSI Conventer Cable	$149.00
Desk top PC/TV Card (8 bit, NISC, VGA)	$299.00
Thunder Video Card-Video image Grabber/win	$355.00

KEYBOARDS

Honeywell 101 Win (3yr. Warranty)	$ 40.00
Keytronic KT02000	$ 43.00
Color-Key 101KB keyboad	$ 30.00
Focus-2001 101Keys w/Hard dust cover	$ 42.00
Focus-5001 130Keys Keyboard	$ 56.00
Dble function Keys, Calculator etc.)	
Focus-9000 128Keys Keyboard Programable	$ 69.00

MONITORS

Tatung 14" SVGA CM-14SBE, .28 Low Radiation	$ 295.00
Tatung 14" SVGA CM-1400 .26 Trinitron	$ 355.00
Tatung 14" SVGA CM-14SBS, .28	$ 289.00
Totung 14 SVGA CM-14SAM, .39mm	$ 235.00
Tatung 14" SVGA CM-14 UAE, .28NI, Low Radiation	$ 335.00
Tatung 17" SVGA CM-17MBD, NI, FS	$ 990.00
Tatung 20" SVGA CM2000, NI, .31mm	$1475.00
NANAO 15" SVGA F340i, LR, FS, NI	$ 799.00
NANAO 17" SVGA F550i, LR, FS, NI	$1159.00
NANAO 17" SVGA T560i, Trinitron, NI	$1859.00
NANAO 20" SVGA T660i, Trinitron, NI	$2495.00
NANAO 21" SVGA F750i, LR, FS, NI	$2150.00

MISC

Teac 1.2MB Floppy Drive	$ 58.00
Teac 1.4MB Floppy Drive	$ 52.00
14.4 Fax/Modem V.42, V.42BIS,V.32, V.32BIS Int.	$ 199.00
14.4 Fax/Modem V.42, V.42BIS, V.32, V.32BIS Ext.	$ 250.00
96/24 Fax/Modem Int W/Super Fax	$ 69.00
IDE Card w/2 serial, 1 Parallel, Game	$ 25.00

Canon Authorized Dealer

TATUNG Authorized Dealer

NANAO Authorized Dealer
Distributed by CADLAX MICRO

VISA MasterCard Financing Available

CALIFORNIA COMPUTER SYSTEMS

950 E. Colorado Blvd. Suite #102,
Pasadena, CA 91106
Hours: Mon-Fri, 9:30-7PM; Sat, 10AM-6PM

818-304-0882
Fax: 818-304-1154

All brand names are trademarks of their respective companies. Prices quoted base on 3% cash discount, Prices and specifications are subject to change without notice. Financing subject to credit approval.

Ask Our 90 Day Same as Cash Financing Program

USER GROUPS

continued from page 154

ACCOUNTING

Cougar Mountain Accounting Software User Group. Call: (818)785-5880. [Exp. #111.]

Orange County ACCPAC Plus Accounting Software User Group. Meetings: 3rd Mon., 6:00 pm. Call: (714)535-5417. [Exp. #107.]

AMIGA

LAAUG—Los Angeles Amiga User Group. Meetings: 3rd Wed., 7:30 pm, Veteran's Memorial Auditorium, Overland Ave. & Culver Blvd. Many SIGs, rookies, monthly PD disks. Call: Kip Hammond, (310)390-3010. [Exp. #111.]

San Fernando Valley Amiga User Group. Meetings: 2nd Tues., 7:00 pm, Meeting Room, Fallbrook Mall. Call: Tony, (818)985-0476. [Exp. #107.]

South Orange Commodore Klub—SOCK. Meetings: 3rd Sat., 9:00 am, Computer Guild, Suite 1003, 24001 Via Fabricante, Mission Viejo. Supports Commodore and Amiga, new users SIG. Call: Don, (714)830-2430. [Exp. #109.]

APPLE

Orange Apple Computer Club. Meetings: 1st Sat., 9:00 am, Orange Coast College, Chemistry Lab. Apple II supported. Call: (714)731-9243. [Exp. #106.]

Original Apple Corps, Apple II User Group. Meetings: 2nd Sun. Support for beginners through experts. Write: PO Box 90065, Los Angeles, CA 90009. Call: Fred Duffy, (310)475-8400. BBS: (310)454-4660. [Exp. #107.]

Tri-City Apple Users Group. Meetings: 3rd Thurs., 7:00 pm, Pasadena Central Library, 285 E. Walnut St. Friendly Apple II experts. Call: (213)258-0281. [Exp. #106.]

Valley Apple Computer Club. Meetings: 3rd Tues., 7:30 pm. Aggeler High School, 21050 Plummer, Northridge. All Apple IIs, no Macs. Call: Bill, (818)988-1752. [Exp. #106.]

ATARI

ATESIG—Atari 8-Bit SIG. Meetings: 145 Surf Pl., Seal Beach. Cooperative user group for Model Railroad applications. Call: (310)430-5433. [Exp. #107.]

R.A.M. Atari User Group Of Ventura County. Meetings: 3rd Wed., 7:30 pm, Write: PO Box 112, Camarillo, CA 93011. Call: Tim, (805)389-0059. [Exp. #110.]

CAD/CAM

Los Angeles Area AutoCAD User Group. Meetings: 4th Wed., 6:30 pm, Burbank Board of Realtor's Bldg., 2006 W. Magnolia Blvd., Burbank. Meetings feature tutorials, Q&As, demos, hands-on, BBS, and newsletter. Call: M. Berman, (818)762-9966. [Exp. #106.]

CLIPPER

Los Angeles Clipper User Group. Meetings: 4th Wed., 6:30 pm, Culver City. Techy talk and speakers. Call: Louise Astorga, (818)886-1574. [Exp. #107.]

COMMODORE

C128 West Commodore 128 User Group. Meetings: Covina & Santa Monica. Free membership. Large disk library. Call: John, (818)331-1589; Paul, (818)892-3859; BBS, (714)598-1755 FidoNet. [Exp. #109.]

C-TUG (Commodore Technical User Group). Two meetings: 2nd Thurs., 2:00 pm, 2233 N. Tustin Ave., Orange, and 4th Sun., Seniro Citizen Center, 170 S. Olive. Speakers, demos, help with any Commodore and Amiga questions. Call: Lou Palush, (714)532-1802. [Exp. #109.]

CORELDRAW

Association Of Corel Artists And Designers, Long Beach/Orange County Chapter. Meetings: 1st Tues., Farmers and Merchants Bank, 12535 Seal Beach Blvd., Rossmoor. National organization that provides support for CorelDraw and its associated programs. Call: Ken Wong, (310)835-6000 or (714)821-5378. [Exp. #111.]

Corel (ACAD) User Group. Meetings: 2nd Tues., 7:00 pm, Glendale Federal Bank Building, 401 N. Blvd. Product demos, Q&A. Call: Art, (213)935-1958. [Exp. #111.]

dBASE

LA FoxPro User Group. Meetings: 3rd Tues., 7:30 pm. All levels welcome. Call: Chuck, (310)539-9439. [Exp. #109.]

DESKTOP PUBLISHING

Southern California Ventura Publisher User Group (SC-VPUG). Meetings: Last Tues., 7:00 pm, 401 N. Brand, Glendale, Glendale Federal Bank Building. Product demos, Q&As, library resources. Call: (818)955-5830. [Exp. #107.]

EPSON

Epson UG/Orange County. Meetings: 3rd Sat, 10:00 am, 2151 Michelson near JW Airport, Irvine. QX, PX, CP/M, VALDOCS—support, tech, periodical & disk library, and parts. Call: (714)893-3305 [Exp. #110.]

IBM & COMPATIBLES

Aldus PC SIG. Meetings: 4th Thurs., 7:00 pm, Graphix Zone, 38 Corporate Park Circle, #100, Irvine. Call: Rick Tuning, (714)549-7352. [Exp. #111.]

Greater South Bay PC User Group. Meetings: 2nd Thurs., 7:30 pm, Christ King Lutheran, 2706 W. 182nd St., Torrance. Visitors welcome. Call: (310)329-2804. BBS: (310)516-0834. [Exp. #107.]

Long Beach IBM PC And Compatibles User Group. Meetings: 3rd Wed, 7:00 pm, Los Altos Methodist Church, 5950 E. Willow St., Long Beach. Call: Jim Wells, (310)439-7114. [Exp. #109.]

Los Angeles Computer Society. Meetings: 2nd Tues., 7:00 pm, Culver City High School Cafeteria. Meetings are free and there are always live presentations and giveaways. Call: (310)473-6668. [Exp. #110.]

NOCCC Business & Spreadsheets SIG. Meetings: 1st Sun., 11:00 am, Chapman College, City of Orange. One of 22 SIGs. Call: (714)998-8080. BBS: (714)962-1857. [Exp. #108.]

Orange County IBM-PC Users Group. Meetings: 2nd Tues., 7:00 pm, Computer Learning Center, 1240 S. State College Blvd., Anaheim. Speakers, software, newsletter. Open to public, all welcome. Call: (714)990-0580. [Exp. #109.]

San Bernardino Personal Computer User Group. Meetings: Last Wed., 7:00 pm, CSU, San Bernardino, University Hall, Rm. 52. Just starting so need input on meeting topics and services desired. Call: Arthur Saltzman, (909)880-5755. [Exp. #110.]

Thousand Oaks Personal Computer Club (TOPCC). Meetings: 4th Thurs., 6:30 pm, Goebel Senior Adult Center, 1385 E. Janss Rd., Thousand Oaks. Call: (805)495-8325. [Exp. #111.]

TUG-NET. Meetings: 1st, 2nd & 3rd Thurs., 7:00 pm, Tektronix Corp., 21300 Erwin St., Woodland Hills. Enter through back door of building, press buzzer. Call: (818)249-1629. [Exp. #110.]

Valley Computer Club. Meetings: 1st Wed., 7:00 pm, Burbank Board of Realtors Bldg., 2006 W. Magnolia, Burbank. BBS, PD library, SIGs, newsletter. All welcome. Call: Wes Arnold, (213)221-4433; or Grayce Hruda, (818)842-3707. [Exp. #111.]

K-MAN

Southern California KnowledgeMan User Group. Meetings: 1st Wed., 7:00 pm, Honda North America, Bldg. 300, 700 Van Ness Ave., Torrance. Call: (213)662-9910. [Exp. #108.]

MACINTOSH

The American Film Institute Mac User Group (AFIMUG). Meetings: 2nd Mon., Apple Lab, AFI, Hollywood. TV, film, and video. Call: Dave Chadderdon, (213)856-7743. [Exp. #109.]

Los Angeles Macintosh Group (LAMG). Meetings: 3rd Thurs., 7:30 pm, Dept. of Water & Power, 111 N. Hope St. So. Cal's largest all-Mac user group meetings, monthly magazine, classes, PD software, and more. Call: (310)278-LAMG. [Exp. #109.]

Original Apple Corps, Macintosh User Group. Meetings: 2nd Sun. Support for beginners through experts. Write: PO Box 90065, Los Angeles, CA 90009. Call: Fred Duffy, (310)475-8400. BBS: (310)454-4660. [Exp. #110.]

San Gabriel Valley Mac User Group. Meetings: 1st Thurs., 7:30 pm, Pasadena Central Library Aud., 285 E. Walnut. Call: (213)684-ICON. [Exp. #111.]

Whittier Area Mac User Group. Meetings: 2nd Sat., 10:00 am, Christian Family Friendship, 11209 First Ave., Whittier. Call: (310)947-2447. [Exp. #111.]

NeXT

Southern California NeXTSTEP User Group. Meetings: throughout LA County. Call: Mike Mahoney, (310)985-1550 or Bob Desharnais, (213)343-2056. [Exp. #106.]

OS/2

LA OS/2 User Group. Meetings: 3rd Thur., 6:30 pm, IBM, 21041 Burbank Blvd., Woodland Hills. Call: Paul Duncanson, (805)584-8732. [Exp. #107.]

POWERBUILDER

Southern California PowerBuilder User Group. Meetings: 1st Tues. Technical presentations, networking, idea exchange. Call: (310)241-8181, ext. 36 or ext. 39. [Exp. #109.]

PROGRAMMING LANGUAGES

APL User Group—SoCal SIGAPL. Meetings: 2nd Wed., Los Angeles City College. Membership includes newsletter. Call: G. Smith, (213)560-2174. [Exp. #109.]

Forth Interest Group, Los Angeles Chapter. Meetings: 4th Sat., 10:00 am, Joslyn Center, 339 Sheldon St., El Segundo. Discussions, presentations, and tutorials include Forth, C, J, smalltalk, C++, OOP, hardware, algorithms, and operating systems. Call: John LuValle, (818)797-1820. [Exp. #109.]

TEXAS INSTRUMENTS

TI/944A Home Computer User Group. Meetings: 2nd Mon., 7:00 pm, Pomona First Federal, 9090 Central Ave., Montclair. Monthly newsletter, demos, and fairware. Call: (714)627-3403. [Exp. #110.]

UGOC. Meetings: 2nd Mon., Fidelity Federal, 13820 Seal Beach Blvd. Call: Joan, (714)633-5379. [Exp. #107.]

THEOS

THEOS User Group. Call: Fred Bellemy, (805)965-0265. [Exp. #108.]

UNIX

UNIX User Association Of Southern California. Meetings: 2nd Mon., 7:00 pm, New Horizons Learnings Center, 1231 E. Dyer Rd., Santa Ana. Call: Vince, (714)556-1220, ext. 126. [Exp. #106.]

VIDEO TOASTER

TUG—Toaster Users Group Of Orange County. Meetings: 3rd Thurs. Call: Bruce, (714)894-1777. [Exp. #106.]

VIRTUAL REALITY

Virtual Reality Special Interest Group (VRSIG). Meetings: The Electronic Cafe, 1649 18th St., Santa Monica. Call: Dave Blackburn, (310)545-0369. [Exp. #110.]

ASSOCIATIONS

Black Data Processing Assoc., LA Chapter. Meetings: 4th Tues., 6:30 pm, ULTC, 7266 S. Figueroa St., Los Angeles. Call: (310)673-6522, 1-800-727-BDPA. [Exp. #107.]

Data Processing Management Association. Meetings: 2nd Thurs., 7:00 pm. An organization composed of all levels of management personnel who have an interest in the field of information processing. Call: (310)549-9680 or (213)225-9210. [Exp. #105.]

Independent Computer Consultants Association, Los Angeles Chapter. Meetings: 1st Thurs., 6:00 pm. Prepaid reservation, $25, or at the door, $35. The LA chapter provides referral services. Call: (213)872-1811. [Exp. #110.]

Microcomputer Managers Association, Los Angeles Chapter. A forum for the discussion of issues relating to implementing and supporting microcomputer technology. Call: (213)243-6843. [Exp. #104.]

Orange County Association Of PICK Professionals. Meetings: 3rd Wed., 6:00 pm, Claim Jumper Restaurant, 18350 Brookhurst St., Fountain Valley. Dinner: Members, $20; nonmembers, $25. Without reservations add $5 additional. Call: (714)641-6347. [Exp. #110.]

The Software Council Of Southern California (SCSC). Non-profit organization for software developers to have a (peer-to-peer) networking and educational forum on industry issues. Call: (310)328-0043. [Exp. #110.]

Is Your Listing Missing?

Free user group and association listings are limited to the group's name and a ten-word description, including the mailing address and contact phone number. They will be **deleted at six-month intervals** to ensure timeliness and accuracy of information. **Free BBS listings** are also limited to the board's name, sysop's name, and a ten-word description including parameters, baud rate, phone number, and registration fee. Because we have an ongoing problem of boards shutting down without telling us, much to the annoyance of would-be callers and the new phone number's owner alike, we will **delete these listings after they've run three months.**

You can update or renew your listings at any time. If yours is missing, send us a new one! Send your listing information to: US Mail should go to: MicroTimes User Group, 3470 Buskirk Ave., Pleasant Hill, CA 94523. **Faxes** are welcome at (510)934-2417 or (213)467-5486.

Email can be sent to: microx@well.sf.ca.us. Or MCI:MICROTIMES.

L.A.'S LEADING SUPER STORES.

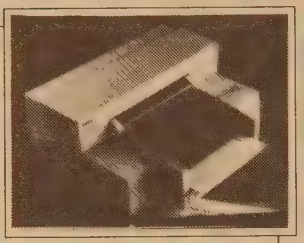
LA COMPUTER CENTER

THE MOST COMPLETE AUTHORIZED HP & TOSHIBA SERVICE CENTERS IN L.A.!

- HP Service
- Postscript Upgrades
- Memory Upgrades
- Batteries
- Cases, RAM
- Fax Modems

NOVELL GOLD AUTHORIZED

NEW PRODUCT!

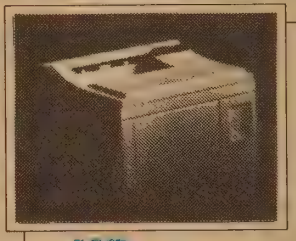


HP Deskjet 550C & HP Deskwriter 550C B/W InkJet Pritners

This HP Color Printer can print solid Blacks and Hi-Res Color at the same time.

$679

HEWLETT PACKARD
Authorized Dealer



NEW PRODUCT!

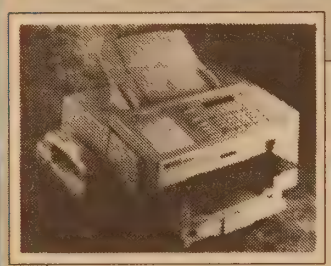
HP LaserJet 4 LaserJet Printer

HP's fast new 600dpi PostScript Laser Printer offers Mac/IBM compatability!

Call for Imediate Delivery!

DeskJet Bonanza!

DeskJet 500C	DeskJet 500	DeskWriter C	DeskWriter
Color Inkjet Printer	B/W Inkjet Printer	Color Inkjet Printer	B/W Inkjet Printer
IBM Compatable Color Inkjet Printer. Get 300dpi Laser Quality Color at three pages per minute!	IBM Compatable Inkjet Printer. Get 300dpi Laser Quality at a Great Price. 3 Year Warranty! Very Reliable	MAC Compatable Color Inkjet Printer. Get 300dpi Laser Quality Color at three pages per minute!	MAC Compatable B/W Inkjet Printer. Get 300dpi Laser Quality at a Great Price. 3 Year Warranty! Very Reliable
$479 *Limited Time	$359 *Limited Time	$489 Limited Time	$369 Limited Time

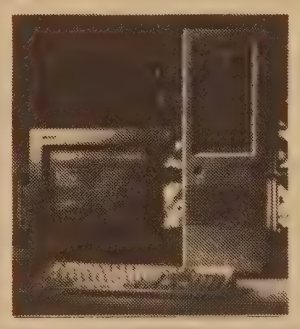


NEW PRODUCT!

HP DeskJet Portable InkJet Printer

For PC Users "on the go" who need portable printing but do not want to compromise in print quality.

$349

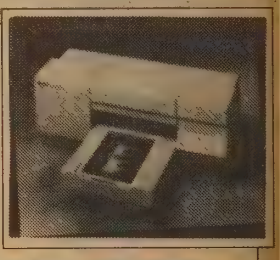


HP Vectra 486DX 33MHz Computer

4MB RAM & 120MB HD
Built in VGA Graphics!
HP Quality and Reliability.
Great for Windows.
Extensive Expansion!

$1679

NOW IN STOCK!



HP PaintJet XL300 Color Tabloid Printer

Large Media Color!
A- and B-size paper output.
Extensive fonts.

$2049

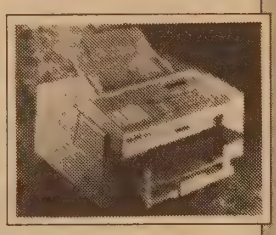
HP FAX Machines

Plain Paper FAX 310 $1069*

Affordable Plain Paper, HP Quality! *After $150 Rebate

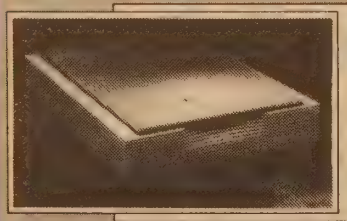
Plain Paper FAX 200 $899

Low Cost Per Page Plain Paper Faxes!
Better Output Quality that lasts!



Plain Paper FAX $649

*After $200 Rebate



HP IIC Color Scanner

600dpi 24bit Single Pass Color!
Clean, Fast, and well priced.
OCR Enhancement Built In!
HP's Premier Scanner.

MAC $1119*
IBM $1309

HP LaserJets

IIISI 17PPM Printer

Designed for Document Intensive Applications and Network Environments

Stock!

IIID 8PPM Printer

Designed for Duplexing.
Optional Envelope Feeder.
PostScript Upgradable!

Stock!

IIIP LaserJet Printer

Resolution Enhancement!
Scalable Typefaces,
PostScript Upgradable.
4PPM and 300dpi!

$869

IIP Plus LaserJet Printer

Resolution Enhancement!
Low Cost and Reliable.
PostScript Upgradable.
4PPM and 300dpi!

$739

Ask about RAM Upgrades, Network Cards, and PostScript Upgrades for you existing Laser!

* Price After Rebate. Prices subject to change without notice. All prices quoted are cash and carry.

WEST L.A. SALES

(310) 479-0999

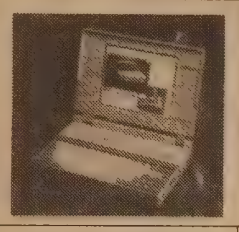
12002 Pico Blvd. East of Bundy

VALLEY STORE

(818) 996-0777

19315 Ventura Blvd. West of Tampa

TOSHIBA T4400C 120MB or 200MB HD 4MB RAM

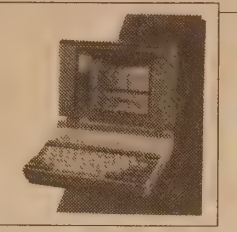


Toshiba's new active matrix screen is the biggest 9.5" VGA color screen available! We also carry FAX/Modems, Docking Stations, and Cases.

120MB HD $3399
200MB HD $3999

TOSHIBA

Authorized Dealer



TOSHIBA Satellite 1850C Color

Features include a 9.5" Color LCD screen, 386SX-25MHz CPU, and Toshiba DOS 5.0! Includes Windows and Mouse!

80MB $2079
120MB $2229

Notebook Bonanza!

T4400SX LCD	T6400DX Color	T2000SXe LCD	T2000SX LCD
2MB RAM &120HD	4MB RAM & 200HD	1MB RAM & 40MB HD	1MB RAM & 60MB HD
This VGA LCD notebook is very lightweight and durable. And has a 486SX 25MHz processor for punch!	With an intel 486DX 33MHz processor and a 200MB HD this unit is one of the fastest portables on the market. It even has 2 full height slots.	This notebook is Lightweight and Economical. It has an Intel 386SX 20MHz.	This low priced notebook is perfect for students, and light windows users. It has a 386SX 16MHz CPU.
80MB $1879 120MB $2099	Color 200MB $4599 Mono 200MB $3399	$929	$899

T5100 386DX	T2200SX	T5200 Color	T3300SL
2MB RAM	2MB RAM & 80HD	2MB RAM & 200HD	2MB RAM & 80MB HD
This POWERFUL DX powered laptop is durable & well priced. The Gas Plasma Screen is also very easy to read.	A 386SX 20MHz CPU and very light weight (5.5lb!) make this notebook one of the best sellers.	Wonderful Colors for a beautiful price. 2 Full Height Expansion Slots for upgrades too!	The 3300SL uses Intel's Energy Saving i386SL long lasting battery life without sacrificing processing speed.
40MB $799 100MB $999	$1099	$2199	80MB $1359 120MB $1599

T4500 Color & T4500

This recent release features a 486DX/20 CPU with an ACTIVE MATRIX COLOR SCREEN. It is available in a B?W LCD version also.

LIMITED STOCK NOW AVAILABLE!

T1850 T1800

The 1850 includes a 25MHz CPU and 4MB of RAM
The 1800 includes a 20MHz CPU and 2MB of RAM
Both have a four hour battery life and a VGA screen!

1850 120MB $1659
1850 80MB $1459
1800 60MB $1059

COMPAQ

NOTEBOOKS!
Lte LITE 25C Color 4/80 $3149
Contura Color 4/120 $2699
Contura 386/25Mhz (84HD) $1599
Contura 386SLC/25 (120HD) $2299

SONY

Complete CD-ROM Kit

Six Compact Disc's,
2 Sony Stereo Speakers,
16bit Sound Card and all the Software needed!

FOR ONLY $699

AST

PLATINUM DEALER SERVICE CENTER

Power Exec 386SL 25MHz - 60MB / 120MB	$1999/$2329
Power Exec 3/25SL Color Win 3.1 & Mouse (160MB)	$2999
Premium Exec. 25MHz Color 80MB	$2199

Advantage 386SX 20MHz 40hd, 1.44, 1.2, Mouse, Win 3.1, and Lotus for only $829!

DTK Computer Inc.

386DX33	486DX33	486DX50
120HD	200HD	200HD
4MB RAM	4MB RAM	4MB RAM
1.2, 1.44	1.2, 1.44	1.2, 1.44
SVGA CARD	SVGA CARD	SVGA CARD
SVGA MONITOR	SVGA MONITOR	SVGA MONITOR
MOUSE	MOUSE	MOUSE
WINDOWS	WINDOWS	WINDOWS
2SER / 1PAR	2SER / 1PAR	2SER / 1PAR
101 KEYBOARD	101 KEYBOARD	101 KEYBOARD
$1299	**$1699**	**$1899**

All systems include 1 year parts and labor!

SONY

320	$339	1604s	$969
430	$589	1936	$1999

NEC

3FGX	$599	4D	$529
4FG	$729	5FGX	$1249

* Price After Rebate. Prices subject to change without notice. All prices quoted are cash and carry.

486SLC-25 NoteBook Speed King: 80MHz

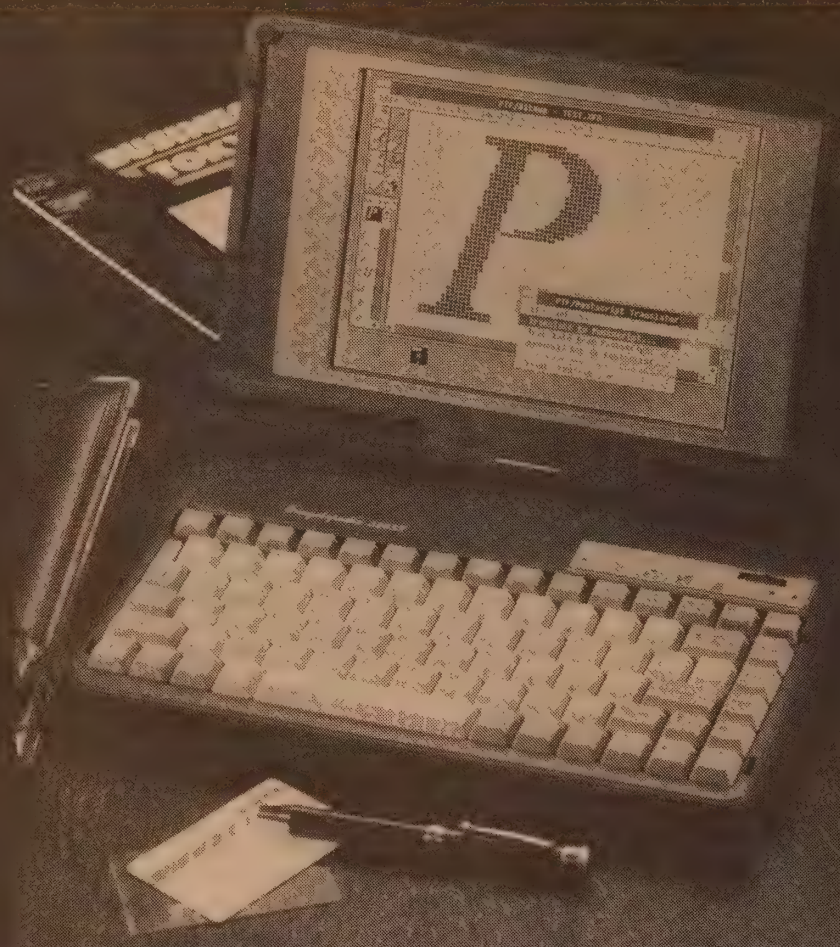
New 25Mhz

486SLC Technology!

Kanix's 486SLC: 80Mhz
Believe it! Kanix's 486SLC notebook benchmarks at about 80Mhz, surpassing the 70Mhz speed barrier of other 486SLC designs. Kanix's Notebook Disk Caching technology realizes this high speed by breaking the bottleneck which normally limits the 486SLC processor.

Bulky AC Adapter Not Needed
No more fears that you forgot to bring your notebook's AC adapter! Kanix's 386SXL & 486SLC notebooks have built in AC adapters. You also save up to $100 since there is no need to buy extra ones for your home and office use. A car cigarette lighter adapter is included too.

- Simultaneously delivers high-speed & longer battery performance
- Built-in 120MB hard disk & 4MB RAM
- Built-in 9600-2400Bd fax/modem!



Only 6.2lbs

486SLC Technology!

- Built-in AC/DC adapter
- Built-in car adapter, and
- Fast 1-hour recharge!

486SLC-25 (4MB/120MB HD) $1749

- 4MB High Speed RAM, Expandable to 4MB
- 120MB Hard Disk
- Built-in 1.44MB, 3.5" Floppy Disk Drive
- Full-Featured, Mechanical 83-Key Keyboard
- 32/64 Gray, Super Twist Backlit LCD screen
- 640 x 480 VGA Resolution, Support VGA/EGA/CGA
- 2 Serial, 1 Parallel Ports
- External Keyboard and Monitor Ports
- **Car Cigarette Lighter Adapter**
- **Built-in AC Power Adapter**
- **Built-in 9600-2400Bd FAX, Modem, Send and Receive**
- Weight 6.2lbs.
- Dimension: 11.8" x 9.54" x 1.96"
- Complete System Includes:
  - Preload MS DOS 5.0, Carry Case, Cigarette Lighter Adapter, Power Cord and Accessory Kit

386SXL-25 (2MB/80MB HD) $1299

- 2MB High Speed RAM
- Support EMS 4.0
- 80MB Hard Disk
- Built-in 1.44MB, 3.5" Floppy Disk Drive
- Full-Featured, Mechanical 83-Key Keyboard
- 32 Gray, Super Twist Backlit LCD 9.5 inch screen
- 640 x 480 VGA Resolution, Support VGA/EGA/CGA
- 2 Serial, 1 Parallel Ports
- External Keyboard and Monitor P
- **Car Cigarette Lighter Adapter**
- **Built-in AC Power Adapter**
- **Built-in 9600-2400Bd FAX, Modem, Send and Receive**
- Weight 5.97lbs.
- Dimension: 11.8" x 9.54" x 1.96"
- Complete System Includes:
  - Preload MS DOS 5.0, Carry C Cigarette Lighter Adapter, Pow Cord and Accessory Kit

Local Bus Base System & System Upgrade

486DX-33 **$1699**

486DX-50 **$1859**

VESA Standard

- 486-33/50MHz Processor with 32-Bit Local Bus Slot
- 4MB RAM, 64K Cache Memory
- 200MB IDE Hard Drive
- Teac 1.2 & 1.44 MB Floppy Drives
- Super VGA Adapter w/1MB
- Non-Interlaced 14" SVGA .28mm Monitor
- 2 Serial, 1 Parallel and 1 Game Ports
- 101-Key Click Keyboard
- Windows 3.1, DOS 5.0 and Mouse
- Full/Middle Tower w/250W Power Supply

Upgrade:

- Award Winning Flat Screen 17" Monitor: .....add $935
- 32-bit ET-4000 Local Bus, 32K color: .....add $65
- 32-bit S3 Windows Accelerator: .....add $165

EISA Base System & System Upgrad

486DX-33 **$1950**

486DX-5 **$213**

- 4MB RAM, 256K Cache Memory
- 200MB IDE Hard Drive
- Teac 1.2 & 1.44 MB Floppy Drives
- Super VGA Adapter w/1MB
- Non-Interlaced 14" SVGA .28mm Monitor
- 2 Serial, 1 Parallel and 1 Game Ports
- 101-Key Click Keyboard
- Windows 3.1, DOS 5.0 and Mouse
- Full/Middle Tower w/250W Po Supply

Upgrade:

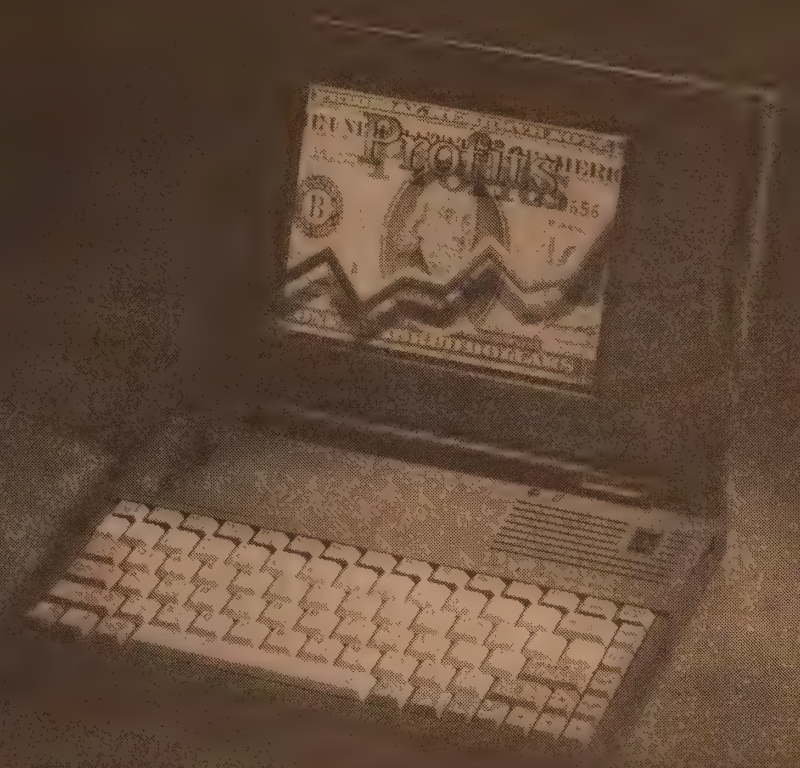
- EISA SCSI Controller w/340M SCSI Hard Drive: .....add $7
- EISA Local Bus S3 Windows Accelerator w/17" Monitor: .....add $9

New Color NoteBook King: Active-Matrix

486SLC NoteBook

- Co-processor Built-in for graphics solution
- SCSI II port allow you connect to CD-ROM

Only 6.6lbs



Options:
- Modem/Fax adapter
- Trackball
- Ethernet LAN
- Battery charger

486SLC-25 TFT Active-Matrix Color — $3299

- 4MB High Speed RAM, Expandable to 8MB
- 120MB Hard Disk
- Built-in 1.44MB, 3.5" Floppy Disk Drive
- **Built-in Co-processor**
- Full-Featured, Standard 85-Key Keyboard
- **TFT Active-Matrix, 16 Colors**
- 640 x 480 VGA Resolution, up to 256 colors, Supports VGA/EGA/CGA
- 1 Serial, 1 Parallel Ports
- External Keyboard and Monitor Ports
- **50-pin SCSI II Ports Built-in**
- Weight 6.6lbs.
- Dimension: 11.5" x 8.6" x 1.8"
- Complete System Includes:
  - Preload MS DOS 5.0, Carry Case, Power Cord and Accessory Kit
- Call for Modem/Fax Trackball upgrade

486SLC-25 Mono LCD/STN Color — $1620/$2200

- 4MB High Speed RAM, Expandable to 8MB
- 120MB Hard Disk
- Built-in 1.44MB, 3.5" Floppy Disk Drive
- Full-Featured, Standard 85-Key Keyboard
- Mono LCD/STN Color
- 640 x 480 VGA Resolution, up to 256 colors, Supports VGA/EGA/CGA
- 1 Serial, 1 Parallel Ports
- External Keyboard and Monitor Ports
- Power Management Function at LCD and Hard Drive
- Weight 6.6lbs.
- Dimension: 11.5" x 8.6" x 1.8"
- Complete System Includes:
  - Preload MS DOS 5.0, Carry Case, Power Cord and Accessory Kit
- Call for Modem/Fax Trackball upgrade

Expert System
(Aimed at buyers who already have purchased PC)

486DX-33/SX-25
$1480/$1159

386DX-40/33
$1120

***(Expert System** Choice Middle Tower or Desktop Case with CTX Monitor)*

- 4MB RAM, Expandable To 32MB
- 64K Cache, Expandable To 256K
- 100MB 15ms Hard Drive
- Teac 1.2 & 1.44 MB Floppy Drives
- Super VGA Adapter w/1MB
- 1024 x 768, .28mm SVGA 14" Monitor
- 2 Serial, 1 Parallel and 1 Game Ports
- 101-Key Click Keyboard
- Windows 3.1, DOS 5.0 and Serial Mouse
- Mini or Desktop Case

Order 714-693-1888

LOGISYS

KANIX, Inc. since 1987
4749 East Wesley Dr., Anaheim, CA 92806
Telephone: (714) 693-1888
Fax: (714) 693-1188

Business Hours: Mon-Fri 7AM to 6PM, Sat. 10AM to 3PM (PST)

Order Information
- Fax Order 714-693-1188
- International Order 714-693-1888
- APO/FPO Orders Welcome
- Corporate PO's Accepted with Approved Credit
- **No Surcharge at Credit Card**
- **Customized Configuration Welcome**

Service Policy
- 1-year parts & labor Warranty
- 2-year Warranty at desktop systems
- 30-day money back guarantee
- Full refund with no restocking fee
- 100% satisfaction guarantee
- Life-Time Toll-Free technical support 1-800-666-5613
- 2nd day part replacement

**Money back features no restocking fee, and does not include opened software or shipping charges. RMA required. Prices subject to change. All trademarks are the property of their companys.* *©1992 KANIX, inc*

continued from page 64

ing the needles becomes impossible, you can't guarantee your customers that you can deliver anymore.

"So if their customers are in the White House, the State Department, the military, whoever, right now they probably deliver a lot of juicy stuff."

He envisions the NSA briefing the new president. "'Now Bill, who makes more important decisions than you do? Nobody. Who makes decisions that affect the lives of more people than you do? Right again, nobody. By the way, this is the intelligence briefing you get from us every morning, and you'll find the transcripts of what so-and-so said to so-and-so on page seven really interesting. You'll find out what the Serbian military commanders are hearing from their bosses. We're the crown jewels. We're NSA. This is what we give you.'

"A privacy advocate walks in and says, 'Bill, on the streets of Moscow you can buy cryptography. This is ridiculous. This isn't working. Let's fix it.' The NSA guy says, 'Bill. Let me tell you what a joke this is. Sure you can buy some software on the streets of Moscow. The day we lift export controls, the amount of encrypted traffic increases a thousandfold. If you lift export controls in any other country, the impact is negligible—how many Microsofts are there in Europe? But if you lift them in the US, encrypted traffic increases a thousand fold.

"'So Bill, I don't care what you can buy on the streets of Moscow; the fact is that all these fax machines and telephones and computers having this built-in idiot-proof, so anybody can use it, will increase the amount of traffic we have to deal with to the point where we can't give you these intelligence reports any more. You won't get it.'

"Now we don't know what Bill gets, but we have to assume it has some value. History is on the side of the guy from NSA. What we're trying to accomplish by this policy of keeping export controls on US companies is very effective. I don't think Clinton will say, 'No, it's more important that Apple be able to sell strong encryption in France.'

"I predict that in the next four years IBM will go to the White House or Congress to argue over export law, over the NSA's and the Department of State's head. And they'll win their argument, and the grounds on which they'll win it will be national security.

"Because IBM will say, 'We've got a billion-dollar mainframe sale opportunity to the government of Germany, and security has now become one of the top three items. Fujitsu is in there, and they want to sell this equipment, and they're going to give the customer exactly the security they want. If you tell us no, thirty thousand jobs will get cut from IBM tomorrow.' NSA will try to say no, but they won't be allowed to say no under those circumstances.

"I would argue that we need to anticipate that's going to happen. Then I would argue that we start thinking about how we're going to behave then, and plan various stages of release."

What seems certain is that changing technology and customer demands are forcing a reexamination of long-entrenched policies, and a dialogue aimed at reaching a reasonable compromise among conflicting interests.

Says Bidzos, "NSA's definition of national security is that we protect their ability to gather intelligence by keeping privacy out of everyone's hands. In the future, the definition of national security, for a country that is one of the most automated in the world, will be, in fact, giving as many people as possible good encryption, because we're the ones that will be vulnerable.

"Whatever possible intelligence is lost to NSA by privacy being everywhere has to pale in comparison to the benefits of securing this automated society and protecting it from things like electronic terrorism and electronic espionage. If somebody could stop the wire transfer system in this country for about 48 hours, you'd have absolute chaos. Seventy-five percent of the money in this country is moved and stored in those computers. The definition of national security is changing.

"All these things are happening quicker than these people want to admit, and they should be engaging people like us, privacy advocates, people in the encryption industry, in discussing what we're doing and why. I would like to see them have to make their case. I'd like to see a national policy review that involves every interested party—law enforcement, NSA, industry, individuals, other parts of government. Get all these parties together and spend the time to get some consensus on what privacy policy should be. Then we can go ahead and implement it.

"Once the policy makers decide on what the policy should be, implementing it is absolutely trivial, but nobody's decided what it should be." ■

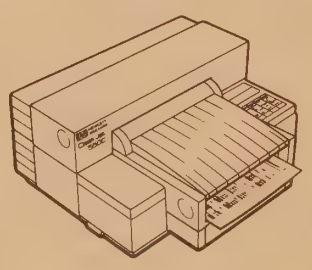
MicroAge Unlimited Possibilities
HEWLETT PACKARD Authorized Dealer

Our New HP DeskJet 550C Lets You Look Sharp In Black — And Even More Brilliant In Color.

Hewlett-Packard
DeskJet 550C Printer

$715.00/*696.00

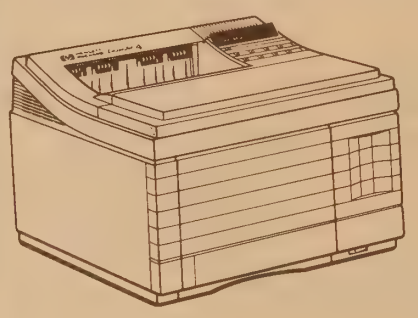
*3%Cash Discount



- 300-dpi, laser-quality black and color printing
- Convenient color printing with two ink cartridges
- Prints on plain paper, transparencies, special paper, executive-size paper and envelopes
- 3-year limited warranty

The New Standard In Laser Printing From HP.

HEWLETT PACKARD *LaserJet 4*



- 600 dpi print quality at a 300 dpi price
- Resolution Enhancement technology and microfine toner for superior output quality
- Fast 8-ppm printing for complex documents
- Outstanding language and platform flexibility
- Full network capabilities (with options)
- Ideal for Windows environment
- Easy to use

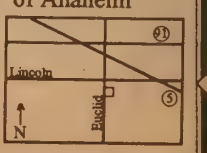
DeskJet 500	**$397.00/*$385.00**	**DeskWriter**	**$397.00/*$385.00**
DeskJet 500C	**$514.00/*$499.00**	**DeskWriter C**	**$514.00/*$499.00**

Call for competitive quote on other Hewlett Packard products!

*3% Cash Discount

HEWLETT PACKARD
Authorized Dealer & Service Center

MicroAge of Anaheim
124 South Euclid Ave.
Anaheim Ca 92802
Tel: 714-533-4600
Fax: 714-533-4619



Classifieds

Accessories

Display Your PC's Screen on up to 20 Monitors
Model 400
Video Splitter
Extension cables to 250 ft. available
Made in USA
Works with VGA, SVGA and RGBS monitors.
Starting at $225
H & R TECHNOLOGY
SANTA ANA, CA (714) 641-6607

Tubular locking drive covers for PC, Mac or laptop. Security cables/no boot software options. ZLockMfg. (310)372-4842

New HP Laserjet toners 92295A, $49 each. New HP Laserjet 2MB memory, 4199. (714) 968-0688

Bulletin Boards

The Westside. LA's largest, most active adult system. 80+ lines, 10000+ Gifs, more! Free trial. (213) 933-4050. (714) 663-9531

KBTS BBS at (818) 967-0701 operating at 2400 to 9600v.32 Baud. Supporting business, education, games and IBM compatible computers. Free file access on first call with 3400 files on-line.

UNZIP It! Download sexy GIFs 1(900)844-2200 69¢ per minute. Must be over 18 years old.

Accessories

Bulletin Boards

Modem Butterfly- Outrageous intelligent fun! Contests, Color GIFs, Shareware, Parties, INSTANT ACCESS. (213)264-6900, (714)828-5500, (818)798-9900, (818)787-6900, (310)767-1010, (310)841-6900, (805)581-0700

Business Opportunities

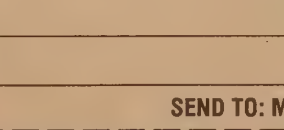
Lifetime income up to 5 figure monthly and 6 figure up front! Free demo disk! Pre-recorded message (818) 377-9531

Established software business for sale. Too large, one person. Software manages California vocational rehabilitation offices. Easily modified for vocational rehabilitation other states/other service businesses. Significant untapped potential. (310) 925-1898

CD-ROM

ADULT CD/ROM! Titles available: Storm (Volumes 1, 2, 3) 650 Megabytes plus, $169 each. Erotic Encounters, world's largest adult CD/ROM, $139. Extasy HotPix, 450 plus megabytes, $179. PC Pix (Volumes 1 & 2), $159 each. All CD/ROM are menu driven and BBS ready. CAL-AD SOFTWARE, P.O.Box 50204, Long Beach, Ca 90815

Computer Insurance



Full replacement of hardware, media, purchased software. From $49 yearly. Covers fire, theft, power surges, other accidents. Blanket coverage; no list of equipment needed. Low $50 deductible. Call for information or immediate coverage.

1-800-848-3469
Local (614) 262-0559

SAFEWARE: The Insurance Agency Inc.
2929 N. High Street, PO Box 02211
Columbus, OH 43202

CD-ROM

Employment Information

Data Conversion

Employment Information

Desktop Publishing

CEDAR'S CONSULTING- We do OCR scanning at 75 cents a page. We also scan logos, and graphic designs at different resolutions in b&w, grayscale and color. PC platform. For details please call (310)328-2044

Employment Information

900 NUMBERS MAKE MONEY! Put your computer to work! Outstanding guidebook, 24hr. recorded details 1-800-369-1410.

Computer Programmers!

IDBMA, Inc.'s INTERNATIONAL Spectrum

The BusinessPerson's Computer Show

April 6-8, 1993, Tuesday - Thursday

Anaheim Convention Center

Show Hours: 9:30 a.m. - 3:30 p.m.

Hunting for a better job?

This year, the BusinessPerson's Computer Show has a new, **FREE** "Computer Job Match Center."

You're invited! Clip out this ad and bring it with you for your **FREE** show admission. Need more info? Call us at **1-800-767-SHOW.**

Micro Times

HOW TO PLACE YOUR CLASSIFIED AD IN MICROTIMES:

MINI DISPLAYS: 1 column inch=1 5/16"x7/8" . $49 per col/inch, camera ready art, or $49 + $20 for 1X typesetting/ production fee.

BUSINESS ADS: Rates are $15 for 15 words or less. 50¢ for each additional word. Your phone number counts as one word.

CATEGORIES: See index to choose the classification that best describes your product or service.

FREE ADS: Private individuals may have one free classified ad of 15 words or less under Hardware, Software, or Accessories only. Mail coupon by the noon deadline for that issue, no phone orders for free ads.

No refunds will be given after copy is received. Credit may be given under certain circumstances

Mail, deliver or fax this coupon along with payment by noon deadline for that issue.

TO RESERVE SPACE
Phone Orders
(213) 851-8600
Fax Orders **(213) 851-8303**
with Visa or MasterCard only.

CLASSIFIEDS CATEGORIES

- ❑ HARDWARE
  - ❑ For Sale
  - ❑ Wanted
- ❑ SOFTWARE
  - ❑ For Sale
  - ❑ Wanted
- ❑ ACCESSORIES
- ❑ BULLETIN BOARDS
- ❑ SERVICES
- ❑ BAR CODES
- ❑ CARTRIDGE REFILL
- ❑ DESKTOP PUBLISHING
- ❑ DISK CONVERSION
- ❑ REPAIRS
- ❑ VOICE MAIL
- ❑ MISCELLANEOUS
  - ❑ Computer Rentals
  - ❑ Office Rentals

_____

_____

_____

_____

_____

_____

Cost of ad _____ **X number of issues to run** _____ **= Amt. enclosed** _____
Discount: 6xs=25% 12xs=50%

❑ Check/MO ❑ Visa ❑ MasterCard Credit Card # _____ Exp. Date _____

Name _____ Amt. _____

Address _____

City _____ State _____ Zip _____

Phone (____) _____

SEND TO: MicroTimes Classifieds, 6767 Forest Lawn Drive, #110 Los Angeles, CA 90068

DEADLINE FOR INSERTION IN THE MARCH 22, 1993 ISSUE IS NOON ON MONDAY, MARCH 8, 1993

Classifieds

Hardware For Sale

LYNX GROUP INT'L, INC. *(310)906-1178*
P. O. BOX 15051, WHITTIER, CA. 90605

NOVELL NETWORK SYSTEM FOR BUSINESS :
- COMPLETE COMPUTER SYSTEMS
- NOVELL NETWORKING
- CUSTOM MADE MULTI-USER MANAGEMENT SOFTWARE ORDER ENTRY, INVOICING, INVENTORY CONTROL, A/P, A/R, BILLING NOTICE, POINT OF SALE.
- CASH REGISTER LINKS TO YOUR BUSINESS ACCOUNTING
- DEMO AVAILABLE, FREE ESTIMATE (SOFTWARE / HARDWARE)

ORDER PARTS BY MAIL
SYSTEM UPGRADE AVAILABLE

WARNING
Your PC is an open door to cranks, snoops and viruses!
Stop them cold with the Boot Sentinel™

Try it out on your PC!
Call or write today for a
FREE DEMO DISKETTE
SentiSoft
4480 Treat Blvd., Ste. #137B
Concord, CA 94521
TEL: (510) 427-7176

HARD DISK UPGRADES
★ATTENTION STORAGE HUNGRY "AT" USERS★
•SOLVE YOUR STORAGE PROBLEMS•
With the Kanix Intelligent IDE controller, all your storage problems will be over. We do Hard Disk upgrades for Compaq, AST, Everex,.....etc.

80MB upgrade **$365.00**
100MB upgrade **$405.00**
120MB upgrade **$440.00**
200MB upgrade **$599.00**
340MB upgrade **$929.00**
for prices up to 2 GB,.... **$ Call**

•The 2 ways to upgrade you Hard Disk•
1. Remove and replace your old drive with a new IDE drive
2. Add alongside (add a new IDE drive as a secondary storage unit...even if you already have an MFM device.)
Or, if you own a Notebook with a docking station, use method #2.

•No drive type definition necessary ....we can upgrade any system.
•Our service policy is as easy to access as our Hard Disks - 48 hour turn-around time with a One Year parts and labor warranty.

Break the 33 MB barrier, Call **KANIX** at:
(714) 693-1888 or Fax (714) 693-1188

Calcomp 1023 plotter, 8 pen Artisan plus, A to D size, $2450. Summa Sketch II plus graphics tablet, $190. Max (310) 453-3212

New CGA color monitor. Includes video card, all new, never used, works perfectly, $85. (310) 439-5730

Frecom Fax 96, $55. Cardinal 9600, $115. Both $160. Days (714) 965-3110. Eves (213) 385-6378

MICROTIMES
CLASSIFIEDS WILL HELP YOU REACH THE TOP FASTER!
CALL TODAY (213) 851-8600

Hardware For Sale

Commodore 64 system, keyboard, 1541 disk drive, 1526 dot matrix printer, power supply, cables, all w/manuals, $200. (213) 249-9620

Hewlett Packard. For sale: HP-85, HP-1B 1/F Ram card, Roms, Roms drawers, thermal paper, etc. (714) 891-5115

XT clone color system w/ printer, $300. (310) 374-9742

MacPlus, 2.5 Meg, $375. Mac 512 & ext drive, $250. Imagewriter II, $200. 30 Meg HD, $200. (714) 738-3505

C128, $35. RGB monitor, $100. Sanyo daisywheel, $50. Will trade for SIMM's or HD. Duke (714) 651-6181

Amiga 500, 1 meg, 2 floppies, color monitor, software, manuals, mouse, joystick, $450/obo. (310) 985-6137

FX-Scan converts your fax to a full page scanner & laser quality printer, $140. Mumtaz (818) 248-5579

386 IBM PS2 model 55SX, 14" VGA monitor, .28 2 MB Ram, 60 MB HD, stacker to 120 MB, $900. (714) 638-8278

Wholesale hard disks, Seagate 40 Mb, $125 and 80 Mb. Minimum order 500 units. Carlos (818) 913-1915

Supra modem 9600 fax w/2400 data, w/warranty, $49. (310) 602-2076

Jobs Wanted

DBase/FDXPRO programmer-entry/junior level part-time, full-time or contract by engineer with cost/schedule/finance background. Self starter looking for opportunity to develop potential. (805) 529-0681

Repairs

LASER PRINTER REPAIR
$59.00 + PARTS
(Seven days a week, 24 hours a day) • FREE Pick Up & Delivery in Bay Area • 1 Year Parts • 5 Years Labor Warranty
408-223-0433 • 415-777-5449
TCRC • LPR Division

Repairs

MONITOR REPAIR
All Brand names & Models
* LOW FLAT RATE
IBM, Compaq, NEC, AST, ALR, Zenith, Samsung, Epson, CTX, Casper, Hyundai, Eversion, Mitsubishi, and more.
- Free estimate
- 180 day warranty
- 2 to 4 day turn-around
- Pickup & Delivery
- Loaner available.

CORPORATE P.O. WELCOME !
PRO-MONITOR SERVICES
3007 S. Harbor Blvd., Santa Ana, CA 92704
Tel (714) 241-1245 ** Fax (714) 241-0820

Miscellaneous

Tax deduction for donation of PC network hardware to high school. Mr Young (714) 630-7943. Non profit organization.

Services

Customized computer training, programming, graphics and data entry services by experts. Get help! (818) 241-0810

SBT with Novell Networks. Your complete networking solutions. Supply, installation, service, troubleshooting. Reasonable. Julius (310) 925-7160

Windows Application Design. Consulting or contract, SDK/DDK. TMA Software - The Windows Experts. 1-800-497-3617

UniTek Co.
Hard Disc Services
Specializing in repair of PRIAM
CONNER, MAXTOR, SEAGATE Hard Drives
From 85¢ per MB
(408) 395-0382

REPAIRS & UPGRADES
• PC's/MAC's • Printers
• Monitors • Networks
✓FAST ✓RELIABLE ✓LOW-COST
On-Site, Contracts, Depot & Board level repairs
Call: **CPS, Inc.** (Since 1984)
(714) 532-3746

Repairs

MONITORS/UPS REPAIR
- ALL COLOR MONITORS 13"-14"..... $80
- ALL MONOCHROME MONITORS 13"-14".. 45
- ALL MULTISYNC MONITORS 13"-14"..... 90
- **SPECIALIZED ON IBMs, MACs, NECs, TERMINALs**
- **UNINTERRUPTIBLE POWER SUPPLIES (TO 2KVA)**
- **FREE** ESTIMATE...PICK UP...DELIVERY (In O. C.)
- SIX MONTHS WARRANTY

3 DAY TURNAROUND (Average)

ACCUTEK
* SERVICE 7 DAYS A WEEK
* DEALERS WELCOME
24602 Jutewood Place
Lake Forest, CA 92630
TEL: (714) 458-2270 FAX: (714) 458-2947

WE WILL BEAT ANY ADVERTISED REPAIR & SALE PRICE

HARD DRIVE REPAIR PRICE			SALE PRICE	*DATA RECOVERY
CAPACITY	MFM/ IDE/RLL	ESDI/ SCSI	MFM/RLL ESDI/SCSI	MFM/RLL/IDE ESDI/SCSI
10 – 19MB	$50	N/A	$60	$180
20 – 29MB	$55	$65	$69	$230
30 – 39MB	$65	$75	$79	$280
40 – 49MB	$85	$95	$119	$330
50 – 85MB	$115	$125	$169	$380
86 –119MB	$135	$145	CALL	$430
120 –160MB	$175	$185	CALL	$480
161 –350MB	$245	$255	CALL	$580
351 –700MB	$325	$335	CALL	$780

* Data recovery includes repair of the drive.
*No charge if we are unable to recover data.

FLOPPY DRIVE REPAIR PRICE	SALE PRICE
5.25" (360K & 1.2MB)..... $20	$22 & $35
3.5" (720K & 1.4MB)..... $25	$30 & $35
3.5" PS/2 (720K & 1.4MB)..... $35	$35 & $50

WE BUY & TRADE-IN WORKING OR NON-WORKING FLOPPY & HARD DRIVES

MONITOR REPAIR PRICE
- •Any Mono..... $45
- •Any CGA..... $60
- •Any EGA..... $65
- •Any VGA..... $75
- •Any Super VGA..... $80
- •Any Multisync..... $95
- •Any Terminal..... $70

CRT AND FLYBACKS EXCLUDED

PRINTER REPAIR PRICE
- •Any Dot Matrix Printer..... $50
- •Any Laser Printer..... $55

SPECIAL SALE OF THE MONTH
- • Tandon 42MB RLL..... *REF.*..... $89
- • Epson 1.2M Floppy Drive..... *NEW*..... $39

CONNER/MAXTOR/WD/SEAGATE
- • 40MB IDE..... *REF.*..... $109
- • 80MB IDE..... *NEW*..... $199
- • 105MB IDE..... *REF.*..... $199
- • 130MB IDE..... *NEW*..... $225
- • 170MB IDE..... *NEW*..... $259
- • 210MB IDE..... *NEW*..... $329
- • 340MB IDE..... *NEW*..... $515
- • MFM/RLL Controller (AT or XT)..... $39
- • IDE Controller w/I/O..... $15
- • Monochrome Monitor..... $25
- • Printer..... $35

SYSTEMS
XT SYSTEMS..... $69
• 640K Memory
• 2FD (360K)
• Monochrome Card
• 2 Parallel Port
XT SYSTEMS W/20MB HD..... $139
AT SYSTEMS...CALL FOR THE BEST PRICE!

PRO COMPUTER SERVICE COMPANY
14392 Hoover St., Suite B3
Westminster, CA 92683
Tel.: (714) 891-8293
(800) 822-PRO2
Fax: (714) 891-3269
VISA MasterCard

Classifieds

Services

DATA·RECOVERY

Self Engineered Tools Provide Over 90% Success Rate • Competitive Prices

Specializing in DOS, Novell, & Macintosh.

Micro Storage

2245 First Street, Suite 116
Simi Valley, CA 93065

Tel (805) 582-9101
Fax (805) 582-9102

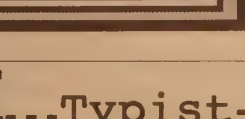
Laser Cartridge Recycling

MENTION THIS AD & GET 10% OFF YOUR NEXT ORDER

HP's, CANON's, IBM's, EPSON
AND ALL OTHER LASER PRINTERS!

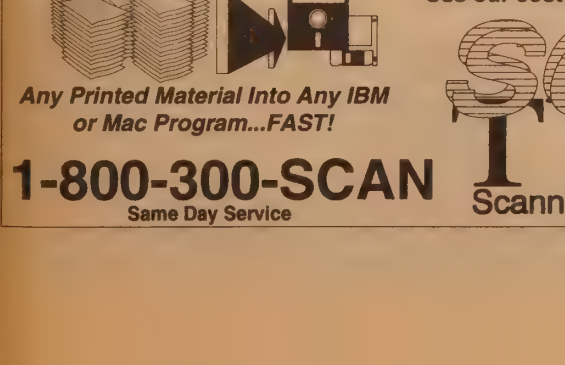
• LCR is Located In Irvine So Call Your Friendly Neighbor Today
• Free Pickup & Delivery • 100% Guaranteed

We at LCR will Disassemble, Inspect, and Replace any worn parts on your toner cartridge. LCR will refill your toner cartridge with a high grade toner. Upon completion each cartridge is individually tested for maximum results.



WE BUY EMPTIES

(714) 453-0123
1-(800) 5-RECYCLE



DATA RECOVERY

Data returned "plug & play" on your drive
Very reasonable prices
Success rate over 90% • Rapid turnaround
DISK DRIVE REPAIR & SALES

DRIVE SERVICE COMPANY

3505 Cadillac Ave • G3 • Costa Mesa • CA • 92626
714-549-3475 • Fax 714-549-9752

CATALINA TECHNOLOGY

FULL SERVICE COMPUTER SALES, SERVICE & REPAIR
ALL COMPATIBLES!
SPECIALIZING IN HARD DISK REPAIR

• 2 to 5 Day Turnaround • Full Warranty On Repair

WE SELL NEW & RECONDITIONED PRODUCTS!

(714) 434-9144
3422 L West MacArthur Blvd.
Santa Ana, CA 92704

FOR HIRE...Typist--2,500 WPM

Why buy expensive hardware and software?
Use our cost-effective quality service.

Any Printed Material Into Any IBM or Mac Program...FAST!

1-800-300-SCAN
Same Day Service

SCAN TYPE™
Scanning/OCR Services

Services

FREE PRINTED 122 PAGE CATALOG 3400+ IBM Prgms. ASP Vendor Sunshine Software, 6492 South St. Suite 470, Lakewood, Ca 90713

MS Word for Windows, v 2.0, $200. v 1.1, $75. Only one copy each. (310) 391-0487

Trading my sport cars & memorabilia for Macintosh software. (714) 495-3980 days.

10 MEGS FOR $10

"Sharewares' Greatest Hits"
Over 30 of the best Shareware/Freeware programs!
Specify 3.5" or 5.25" HIGH capacity disks.
Add $3 s/h. Call or write for a FREE DISK CATALOG

ByteSize Software
95 Seafore, Dept. ET11
Laguna Niguel, CA 92677
(714) 363-0653

Software Wanted

NEW SOFTWARE PRODUCTS WANTED...To acquire/license...By Small Successful Software Co... fax brief synopsis of software capabilities & target market to: PERFECT NICHE SOFTWARE, INC., Fax: (602)949-1707

Services

DUPLICATION

IBM OS/2 · MACINTOSH · APPLE
COMMODORE · ATARI
24 Hour Turnaround.
Fastest in the West.
No Minimums!!! Custom Printed
Tyvek Sleeves & Labels
Optical Text Scanning

I.D. DISK CO. 818-882-6454
NATIONWIDE 1-800-882-6454

A SOFTWARE DUPLICATION

BEST PRICING!

Wizard

All 3.5" & 5.25" Formats
IBM Apple Macintosh Amiga PS/2
Commodore 64 CP/M Atari 520 ST
Wang Xerox Zenith TRS-80 UNIX

(714) 641-6691 FAX: (714) 641-6693
Santa Ana, CA

Software For Sale

10 MEGS FOR $10

"Sharewares' Greatest Hits"
Over 30 of the best Shareware/Freeware programs!
Specify 3.5" or 5.25" HIGH capacity disks.
Add $3 s/h. Call or write for a FREE DISK CATALOG

ByteSize Software
95 Seafore, Dept. ET11
Laguna Niguel, CA 92677
(714) 363-0653

Software Wanted

Computer Consultants!

IDBMA Inc.'s INTERNATIONAL *Spectrum*

The BusinessPerson's Computer Show®

April 6-8, 1993, Tuesday - Thursday

Anaheim Convention Center

Show Hours: 9:30 a.m. - 3:30 p.m.

Looking for quality business software?

Southern California's longest-running, most successful business computer show has the solutions you want. All major computer manufacturers represented. Over 100,000 sq. ft. of exhibits.

You're invited! Clip out this ad and bring it with you for your **FREE** show admission. Need more info? Call us at **1-800-767-SHOW.**

Micro Times

MICROTIMES

Classifieds Work!
Call
(213) 851-8600
Today!!

Services

PC NETWORKING

Novell, Acctg, Inv Cntrl Sys
HW/SW Setup, & Integration
Programming in dBase,
Clipper, Paradox, & C

Call PCMAX(818) 812-4603

CUSTOM PROGRAMMING

FoxPro 2, dBase, Clipper, C, Novell, Windows, SBT, Accounting, Manufacturing, Point of Sale, Any Special Applications

CALL DILIP (714) 994•3304

Services

SOFTWARE DUPLICATION

Serving all of Southern California & the U.S.A. since 1980!

•Competitive Prices	YES	•Verifiability	YES
•5 1/4" & 3 1/2" Format	YES	•Quality	YES
•Fast Turn Around	YES	•Service	YES
•Packaging	YES	•Name Brand Media	YES

FSi FUTURE SOLUTIONS, INC

17921G SkyPark Circle
Irvine, CA 92714
(714) 250-1133

LOOK IN MICROTIMES CLASSIFIEDS FOR THER PRODUCTS OR SERVICES YOU NEED!

Reusable Toner Cartridges for Series II/III Laser Printers

- Save 40% in Cartridge Costs
- Print Quality as Good As New
- Important Recycling Opportunity
- Free Pick-Up and Delivery in Greater Los Angeles Area
- Fully Guaranteed

(818) 794-5561 or (213) 624-0089

LAZER Cartridge Service

We also buy empty cartridges

MICROTIMES

Classifieds Work
Call 213-851-8600

Novell Classes

MT. SIERRA CAREER COLLEGE

Novell® Technology Institute Affiliate

Become a Certified

Network Engineer or **Netware Administrator**

(CNE) (CNA)

Frequent Class Starts

- 3 Month or 9 Month Programs
- Individual or Diploma Classes
- Small Classes (Max=12)
- Saturday, Evening and Afternoon Classes
- All Classes Taught by CNI's (Certified Novell Instructors)
- Payment Plans Available

Sierra Educational Group

1420 El Centro St. • So. Pasadena, CA 91030

AMERICAN EXPRESS · DISCOVER · MasterCard · VISA

(818) 403-1900

COMPUTER LIQUIDATION CENTER
formerly A.J. COMPUTER SUPPLIES

WHOLESALE TO THE PUBLIC
UP TO 75% OFF SUGGESTED RETAIL

UP TO 75% OFF SUGGESTED RETAIL

LOGITECH PRODUCTS

SCANNERS:
Logitech Hand Held Scanners Gray Scale Model 32 w/OCR Scanman Model 32, 400DPI, 4" Wide, Bundled w/OCR & Gray Touch
$135

MOUSES:
Logitech 2 Button Hi-Resolution Curve, 400DPI, 100% Microsoft Compatible
$15
(INCLUDES Logitech Drivers For DOS & Windows)
Quantity 100+ **$10**
Quantity 1000+ **$8.50**

MOUSEMAN:
Serial **$55**
PS2 ..... **$55**
C9 Hi-Resolution Serial or Bus **$65**

ATTENTION DEALERS

RELOCATION SPECIAL!
AST 386SX/16 WORKSTATION INCLUDES:
- 1Meg RAM
- VGA Board
- 101 Keyboard
- 1.44 High Density Floppy

ONLY $275

ATTENTION: AST COMPUTER USERS

LET US UPGRADE YOUR 286 SYSTEM TO A 386 OR 486
CONVERT YOUR AST 286 SYSTEM To 386/20DX w/1Meg & 64K Cache **ONLY $195**
CONVERT YOUR AST 286 TO 386/33MHz w/4Meg RAM **ONLY $395**
CONVERT YOUR AST 286 TO 486/25MHz w/4Meg RAM **ONLY $495**
CONVERT YOUR AST 286 TO 486/33MHz w/4Meg RAM **ONLY $695**

AST COMPLETE SYSTEM
√Workstation 386SX/16MHz w/1Meg RAM, 1.44 Drive, 101 Keyboard **$275**
√386/33MHz w/4Meg RAM, 80MB IDE, 1 Drive, VGA+ Board, Keyboard **$925**
√486/25MHz w/4Meg RAM, 110MB IDE, 2 Drives VGA+ Board, Keyboard **$1075**
√486/33MHz w/4Meg RAM, 120MB IDE HD, VGA+ Board, 101 Keyboard, Logitech Mouse ... **$1295**

FOR OTHER AST PARTS CALL!

MISCELLANEOUS

3M Tape 2120 (For Tape Back-Up) **$15**
Quantity 100+ **$12**
ESDI Seagate Full HT 320MB **$395**
Rampage Plus 286 w/512K **$75**
AST Notebook Fax Modem: Data w/MNP5 Fax/Send Exc **$95**

YOUR #1 AST SPARE PARTS DISTRIBUTOR IN SOUTHERN CALIFORNIA

5332 Industrial Dr.
Huntington Beach, CA 92649

(714) 895-5802
FAX: (714) 897-9498

HOURS:
M–F 9 a.m. to 5 p.m.
Some Sat.'s 10a.m. to 3p.m.
Sun. @ the Computer Swapmeet nearest you!
Prices & Availability Subject To Change.

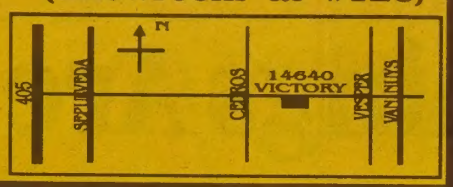
ADVERTISERS INDEX

3-6 COMPUTERS 114,115
A & P COMPUTERS 38
A-1 COMPUTERS 145
ACI, AMERICAN COMPONENT INT'L 80
ACP SUPERSTORE 150
ALCOM SYSTEMS 169
ALPHABET CITY 108
AMERICAL GROUP 3
ASEAN COMPUTER TECHNOLOGIES 126,127
ATC 32
AUTHORIZED TECHNICAL SERVICES 136
B & N COMPUTER 49
BINARY GROUP, INC. 16,17
BINOMIAL SYSTEMS 31
BLUE CHIP AUTOMATION 42
BOLD DATA TECHNOLOGY 104
CALCOM PRODUCTS 64
CALIFORNIA COMPUTER SYSTEMS 156-158
CD GROUP 49
CEDAR COMPUTERS 70,71
CENTURY COMPUTER SYSTEMS 128
CERTIFIED NETWORK EDUCATORS 45
CITICOM COMPUTER, INC. 28
COMPUHELP COMPUTERS 81
COMPUTEK 25
COMPUTER BUSINESS CENTER 120,121
COMPUTER CONCEPT 137
COMPUTER LIQUIDATION CENTER 168
COMPUTER MARKETPLACE 147
COMPUTER MAX 135
COMPUTER PACER 15
COMPUTER SUPPLIES UNLIMITED 20
COMPUTER SUPPLY CLUB 118
COMPUTER SWAP 14
COMPUTER WIZ 8
COMPUTERLAND 74
COMPUTERLANE 54
COMPUTIX 92,93
COMTRADE 123
CONTEMPORARY COMPUTER TECH. 61
CORPORATE SYSTEMS CENTER 44
CREATIVE COMPUTERS 113
D.C. COMPUTER, INC. 82,83
DAV-TECH 4,5
DENNOW CORPORATION 13
DIGITECH RESEARCH 40,41
DOMINO SELF SERVICE CTR. 2
DSC, DATA SOLUTION COMPUTER 92,93
ELECTRONIC MUSIC BOX 139
EVERNET SYSTEMS INC 10
EZ COMPUTER 50
FRY'S ELECTRONICS 85-89,171
GATETRONIX CONTROL SYSTEMS 124
GENERAL COMPUTER 99
GOODMAN MUSIC 9
HACKER ELECTRONICS 105
HOLIDAY INN EXPRESS 108
HYDRA DEVICES 138
INFINITY DESIGN SYSTEMS 117
INFINITY PC & PERIPHERALS, INC. 142,143
INK & ART 150
INPUT AUTOMATION 138
INTERNATIONAL SPECTRUM 24
INTERNET TECHNOLOGY,INC. 27
JENLISH INTERNATIONAL 141
K-NET 47
KAMFOZ COMPUTER SYSTEMS 105
KATRONIC COMPANY 155
KBBS 153
KING CORPORATION 129
L.A. COMPUTER CENTER 160,161
LOGICACHE COMPUTERS, INC. 34
LOGISYS 52,53,162,163
MACRO TECHNOLOGIES 131
MAGICTEK COMPUTERS, INC. 96,97
MASTERS SOFTWARE COMPANY 45
MAXI MICRO 75
MAXIMUS 123
MESA COMPUTERS 134
MICRO AMERICA 69
MICRO DISCOUNT CENTER 35
MICRO OPERATIONS 140
MICRO-CITY/GST, INC. 66,67,153
MICROAGE COMPUTER CENTER 164
MICROSEL PERIPHERAL 49
MICROTEK COMPUTER, INC. 7
MODEM BUTTERFLY 153
MT. SIERRA CAREER COLLEGE 168
NET COMPUTER 148,149
NETFOCUS 65
NEW TECHNOLOGIES 72,73
P.C. SOLUTIONS, INC. 78,79
PACIFICO COMPUTER CENTER 63
PASADENA COMPUTER CENTER 132,133
PC CLUB 57
PC CONSULTANT CLUB 77
PC FACTORY 11
PC SERVICE 46
PC SYSTEMS DESIGN 110,111
PC WAREHOUSE 106,107
QUALITY COMPUTERS, INC. 94,95
QUARTERDECK OFFICE SYSTEMS 172
RANTEK COMPUTER CENTER 37
RESOURCE INFORMATION SYSTEMS 21
ROYAL COMPUTER 94,95
SA COMPUTERS 130
SELCOR DIRECT 39
SO & SO SYSTEMS 10
THE ESSENCE GROUP 100-103
TOP COMPUTER SYSTEMS 18
TRANSNATIONAL ELECTRONICS, INC. 84
TSC, US TURBO SYSTEM 92,93
UNITEK COMPUTER STORES 22,23
UQM COMPUTER 151
USM DISTRIBUTORS 58,59
VALLEY COMPUTER 98
VERTICAL ENTERPRISES 91
WELLS FARGO BANK 48

This index is provided as an additional service. Although we do our best to maintain accuracy, the Publisher does not assume liability for errors or ommissions.

ALCOM SYSTEMS

14640 Victory Blvd., #118, 125 & 130
Van Nuys, CA 91411 (Showroom at #125)
TEL: (818) 989-9182
FAX: (818) 989-2371
Mon - Fri 9-6
Sat 10-5



High Performance VESA Standard LOCAL BUS Systems

486DX2-66 MHz

- 80486DX2-66 MHz with INTEL CPU
- 256K cache on board
- 2 VESA STANDARD LOCAL BUS slots
- 4 MB memory (70ns)
- Memory expandable to 32 MB
- TEAC 1.2 MB & 1.44 MB floppy drive
- MAXTOR 130 MB IDE hard drive
- 32 bit VL-BUS accelerator card w/ 1 MB
- Up to 1280 X 1024, 16.8 million color
- 14" Multisync SVGA monitor, .28 dp
- VESA standard, NON-INTERLACED display
- 2 serial, parallel, & game ports
- Enhanced 101 key keyboard
- Full tower case w/ 250 Watt p.s.
- 2 cooling fans for extra protection
- High resolution mouse

$1829

486DX-50 MHz

- 80486DX-50 MHz with INTEL CPU
- 256K cache on board
- 2 VESA STANDARD LOCAL BUS slots
- 4 MB memory (70ns)
- Memory expandable to 32 MB
- TEAC 1.2 MB & 1.44 MB floppy drive
- MAXTOR 130 MB IDE hard drive
- 32 bit VL-BUS accelerator card w/ 1 MB
- Up to 1280 X 1024, 16.8 million color
- 14" Multisync SVGA monitor, .28 dp
- VESA standard, NON-INTERLACED display
- 2 serial, parallel, & game ports
- Enhanced 101 key keyboard
- Full tower case w/ 250 Watt p.s.
- 2 cooling fans for extra protection
- High resolution mouse

$1739

486DX-33 MHz

- 80486DX-33 MHz with INTEL CPU
- 256K cache on board
- 2 VESA STANDARD LOCAL BUS slots
- 4 MB memory (70ns)
- Memory expandable to 32 MB
- TEAC 1.2 MB & 1.44 MB floppy drive
- MAXTOR 130 MB IDE hard drive
- 32 bit VL-BUS accelarator card w/ 1 MB
- Up to 1280 X 1024, 16.8 million color
- 14" Multisync SVGA monitor, .28 dp
- VESA standard, NON-INTERLACED display
- 2 serial, parallel, & game ports
- Enhanced 101 key keyboard
- Medium tower case w/ 230 Watt p.s.
- 2 cooling fans for extra protection
- High resolution mouse

$1479

Affordable ISA Systems

486DX2-66 MHz

- 80486DX2-66 MHz withm Intel CPU
- 256K cache on board
- 4 MB memory (70ns)
- Memory expandable to 32 MB
- TEAC 1.2 MB & 1.44 MB floppy drive
- MAXTOR 130 MB IDE hard drive
- SVGA card w/ 1 MB memory
- 14" Multisync SVGA monitor, .28 dp
- VESA standard, NON-INTERLACED
- 2 serial, parallel, & game ports
- Enhanced 101 key keyboard
- Full tower case w/ 250 Watt p.s.
- 2 cooling fans for extra protection
- High resolution mouse

$1699

486DX-50 MHz

- 80486DX-50 MHz with INTEL CPU
- 256K cache on board
- 4 MB memory (70ns)
- Memory expandable to 32 MB
- TEAC 1.2 MB & 1.44 MB floppy drive
- MAXTOR 130 MB IDE hard drive
- SVGA card w/ 1 MB memory
- 14" Multisync SVGA monitor, .28 dp
- VESA standard, NON-INTERLACED
- 2 serial, parallel, & game ports
- Enhanced 101 key keyboard
- Full tower case w/ 250 Watt p.s.
- 2 cooling fans for extra protection
- High resolution mouse

$1579

486DX-33 MHz

- 80486DX-33 MHz with INTEL CPU
- AMI BIOS
- 256K cache on board
- 4 MB memory (70ns)
- Memory expandable to 32 MB
- TEAC 1.2 MB & 1.44 MB floppy drive
- MAXTOR 130 MB IDE hard drive
- SVGA card w/ 1 MB memory
- 14" Multisync SVGA monitor, .28 dp
- VESA standard, NON-INTERLACED
- 2 serial, parallel, & game ports
- Enhanced 101 key keyboard
- Mini tower case w/ 230 Watt p.s.
- High resolution mouse

$1349

386DX-40 MHz

- 80386DX-40 MHz with AMD CPU
- AMI BIOS
- 128K cache on board
- 4 MB memory
- Memory expandable to 32 MB
- TEAC 1.2 MB & 1.44 MB floppy drive
- MAXTOR 130 MB IDE hard drive
- 16 bit SVGA card w/ 1 MB memory
- 14" Multisync SVGA monitor, .28 dp
- VESA standard, NON-INTERLACED
- 2 serial, parallel, & game ports
- Enhanced 101 key keyboard
- Mini tower case w/ 230 Watt p.s.
- High resolution mouse

$1059

MULTIMEDIA UPGRADE KIT

Specifications:

- **Sound Blaster Pro sound board**
  - Stereo digital/analog mixer for stereo audio sources: DAC, FM, microphone, line-in and CD
  - 20 voice, 4-operator OPl-3 FM synthesizer
  - Output power amplifier with volume control
  - Built-in MIDI interface for music and sound creation
- **SONY CD-31A CD-ROM Drive**
  - MPC compatible
  - Mode-1 550MB/Mode-2 680MB capacity
  - 64K buffer size
  - 490ms access speed
  - Data transfer rate: 150KB/sec.
  - Supports Kodak photo CD format
- **Software Bundle**
  - Multimedia Encyclopedia
  - World Atlas
  - U.S. Atlas
  - Referance Library
  - The San Diego Zoo Animals
  - The Secret of Monkey Island

FREE SPEAKERS

Only $479

QUALITY & SERVICE YOU CAN COUNT ON

All name brand & quality components
All systems are fully tested & burned-in for 72 hours
Free upgrade at no extra labor charge
Free lifetime technical support
Friendly customer service

One year parts & labor warranty

30 Days Money Back Guarantee

20% restocking fee on non-defective parts
Price subject to change without notice
* Apply only during the warranty period
Prices reflect 3% cash discount

Genius Serial Mouse	$ 14
Trackball Mouse	$ 25
2400 Internal Modem	$ 35
96/24 Internal FAX/Modem	$ 70
14.4/14.4 Internal FAX/Modem	$ 215
AL Graphic Accelerator Card	$ 80
Stereo Sound Card	$ 25
Sound Blaster (OEM)	$ 79
Sound Blaster Pro	$ 149
SONY Internal CD-ROM	$ 279
With Software Bundle -- ADD	$ 100
Panasonic 2123 24-pin Printer	$ 235
Okidata 400 Laser Printer	$ 599
HP Laserjet 4, 600dpi, 2 MB	$1399
Colorado 120 MB Tape Drive	$ 179
Colorado 250 MB Tape Drive	$ 239

These Things Are Killing Us

Or Any Excuse Not To Work (Another Fake Interview)

BY JOHN C. DVORAK

DVORAK'S LAST COLUMN

There are meetings, there are support groups, there are all sorts of problems people are having with keyboards and power lines and monitors that zap you until you're sterile. Wanting to know more, I sought out the knowledge of an expert in the new field of computer medicine—Phineas Fishbein.

This is an unusual field, computer medicine—how did it come about?

Well, when the microcomputer was first introduced I began to see a number of unusual joint and nerve damage in a small number of people. At first the cases were extremely rare, but perplexing nonetheless. Then as the popularity of the microcomputer began to boom, the number of injuries increased tenfold.

Can you give me an example of one of these injuries?

Well, when Apple came out with the Macintosh I began to see a great many people with osteo...well, in laymen's terms, stiff wrist. I did not at first make the correlation, however. It was not until I myself began to utilize a Macintosh for my own entertainment that I became cognizent of its unusual properties.

So, is this how CompuMedicine began?

Oh my, yes. The Mac was the seed of inspiration. I began to understand the full implication of its effects on the musculoskeletal system.

Copyright © 1993 by John C. Dvorak. All rights reserved. *John C. Dvorak graduated from the University of California. He is a contributing editor of* PC Magazine *and* MacUser, *and is considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.*

Do you still use your Mac?

Oh, no! I now believe the original Mac to be very dangerous. They alone account for more crippling injuries than football, worse than hang-gliding. There are people who will continue to use them, just as people continue to jog until they can barely walk. But I most assuredly cannot take the risks. No, no. The closest that I get to a computer these days is treating the injuries.

What maladies have you isolated, so far?

The manifestations are numerous. Computitis has two basic subgroups, skeletal and muscular. Within the skeletal, there are an additional two major subgroups, of which I will give the example of the common compu-osteomyelitis, a condition characterized by pain in the finger joints, most usually the knuckle, relating to excessive keyboard percussive tapping...

Excuse me?

...which often occurs when the user of the device uses excessive force on the keyboard. This injury is compounded by touch typing, which utilizes all eight fingers and one thumb.

Does this mean that using two fingers in a hunt-and-peck is better?

No, not better. Two fingers are still traumatized. Only the remaining six are spared.

There've been some articles on eyestrain and monitors. Do you have any comments on this?

Sir, I've not completed my response to the first query. Now where was I? Oh yes. One skeletal problem that I believe can be avoided is compu-scoliosis, a curvature of the spine. This can be completely avoided by the use of a bar stool. The stool should be several inches higher than the desk top.

So you lean down?

Precisely. Oh, as to your second question. I advise using yellow ski goggles at all times while gazing at the monitor. Prevents eye strain.

What other problems have you seen?

There are so many. Gosh. The condition known as Computitis Gravis Obliqui is of epidemic proportions. And, my my, you and your readers must be aware of compufungi tineus computiti. Then there is monocompuleosis, although that is primarily an adolescent problem...

What are these things? What can be done to avoid them?

Compufungi tineus computiti is a terrible skin problem. It can be completely avoided if one takes care to wipe down a multiuser keyboard prior to use. At the very least, rubber gloves should be used. Monocompuleosis is very common with teens who use the older, hand-me-down computer with monocolor screens. A pervading fatigue accompanied by blinking and tearing of the eye are the main symptoms. As yet the only cure is total bed rest.

That's terrible.

It's certainly not as bad as Flopdiskdinkitis. Although the research has not been conclusive, it seems that constant contact with magnetic media such as floppy disks causes a sharp decline in the libido of most males. It's believed that the testosterone levels are somehow reduced by the exposure.

I had no idea that computers were the cause of so many problems.

Did you know that one simple computer can cause more than three hundred different illnesses? It's more of a health hazard than the common housefly.

Now, I don't believe that. I use them all the time and I've never become ill.

Have you ever had dizzy spells, nausea, or a ringing in the ears?

Why yes. But...

Have you ever had a very dry mouth, sweaty palms, and made numerous typing mistakes?

Yes.

Do you ever find yourself staring at the screen?

Yes, but what are you getting at?

And, have you ever become wildly frustrated with a new program because you couldn't get it to work properly?

Come on, everyone does that.

Have you been engrossed in the program game, whatever, and been unable to tear yourself away?

Yes, but that's my job.

You've just answered yes to the five warning signs of computer disease.

I don't feel well...I'm going home to bed!

Good idea! ■

Fry's ELECTRONICS

WONDERFUL WORLD OF COMPUTERS... ...AND MORE!

ONE STOP SHOPPING FOR THE HI-TECH PROFESSIONAL!

486DLC-33MHz
MINI TOWER SYSTEM
CYRIX 486DLC CPU

80486DLC 33MHz CPU
1MB RAM Expandable to 32MB
2 Hard/2 Floppy Controller
3.5" 1.44MB Floppy Drive
101-Key Keyboard • Clock/Calendar
Case / Power Supply
#1743603

$449

WE HAVE OVER 10,000 ELECTRONIC ITEMS AT ULTRA-LOW PRICES!

COMPUTERS
HARDWARE AND SOFTWARE

IBM • HEWLETT PACKARD
PANASONIC • EPSON • TOSHIBA
SONY • SEAGATE • NEC • HAYES
3M • PRACTICAL PERIPHERALS
MAXTOR • LOGITECH • FUJI • MAXELL
CONNER • ORCHID • MICROSOFT
BORLAND • SYMANTEC • CITIZEN
LOTUS AND MANY MORE!

SEE FOR YOURSELF... COMPUTERS, MONITORS AND PRINTERS ARE ON DISPLAY!

FOR MAC
1MEG X 8-70NS SIMM MODULE

$32.99
#1658600

FOR MAC
4MEG X 8-80NS SIMM MODULE

$129.99
#1722411

HEWLETT PACKARD
Authorized Dealer

DeskJet 550C Color InkJet Printer

COLOR INKJET OUTPUT AT 300 DPI!
Prints in Color or Black and White at the same time 100 Sheet Paper Feeder • Serial/Parallel 13 Scalable Fonts for Windows • 84 DOS Fonts Whisper Quiet • 3 Year Warranty

$693.95
#1733703

AUDIO VIDEO

VCRs • Camcorders • Sega
Hi-Resolution TV Monitors
CD Players • Large Screen TV's
Personal Audio • Calculators
Telephones • Stereo Systems
and Components

brother PowerNote NOTEBOOK WORK ORGANIZER

From Brother comes the ultimate value in notebook work organizers. This unit utilizes a standard 3.5" 240K floppy disk drive and can interface with most PC Compatible laser, dot matrix, InkJet, and daisy wheel printers, also it's ASC II files can be downloaded to and from PC's. The easy to use main menu features a scheduler, calendar, address book, built-In Spreadsheets, word processing with a 72,000 word dictionary, a 45,000 word Thesaurus, and the arcade game Tetris. Don't wait! Quantities are limited

Now Just...
MODEL PN-4400
#1760329
ORIGINAL SUGGESTED RETAIL PRICE $649

Limit 1 per customer
No sales to dealers or resellers.

$199.95

BELLSOUTH FAX MACHINE
WITH 16 LEVEL GREYSCALE

This fully featured fax machine offers 16 level greyscale, auto phone/fax switchover, transmission report, voice request, and multiple OMR settings. An excellent value at only...

MODEL 2501
#1741405

$249.95

ELECTRONIC COMPONENTS

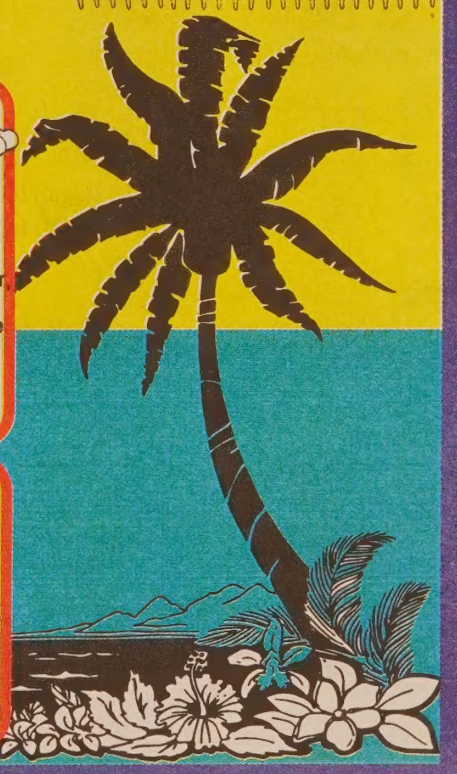
OVER 5,000 DIFFERENT ITEMS:
ICS • MEMORY • MICROPROCESSORS • TTL • FAST • HCT • CMOS • LS • ALS • AS • S • LINEAR DISCRETES
RESISTORS • SOCKETS • CONNECTORS • CRYSTALS • OSCILLATORS
A VAST ASSORTMENT OF TOOLS AND ACCESSORIES FOR THE ELECTRONIC PROFESSIONAL AND ENTHUSIAST!
Factory Fresh
100% Guaranteed

SERVICE
7 DAYS A WEEK

AT/386/486 SYSTEMS
DIAGNOSTICS AND REPAIR
MEMORY & DRIVE INSTALLATIONS
LASER & DOR MATRIX PRINTERS
REPAIR • NOVELL NETWORK
CONFIGURATIONS

CONVENIENCE
FAST ONE-STOP SHOPPING

A WIDE SELECTION OF MAGAZINES, SOFT DRINKS, SNACKS, CANDY, HEALTH AND BEAUTY ITEMS, STATIONARY AND OFFICE SUPPLIES WITH ALL THE LEADING BRANDS ON ALL THE MOST USED AND WANTED PRODUCTS FOR YOUR EVERYDAY NEEDS
Home of Fast, Friendly, Courteous Service



Home of Fast, Friendly, Courteous Service

Fry's ELECTRONICS

Prices good through March 15, 1993

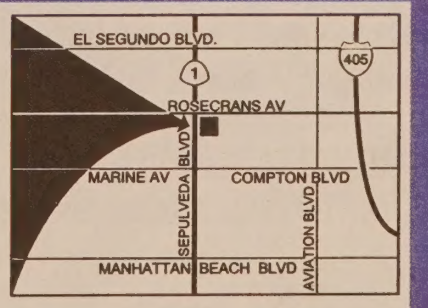
Limit Rights Reserved
Not Responsible For Typographical Errors

STORE HOURS:
MON-FRI
8AM-9PM
SATURDAY
9AM-8PM
SUNDAY
9AM-7PM

VISA MasterCard
VISA AND MASTERCARD

MANHATTAN BEACH

3600 Sepulveda Blvd.
(310) 364-FRYS (3797)
CORP. P.O. FAX (310) 364-3700



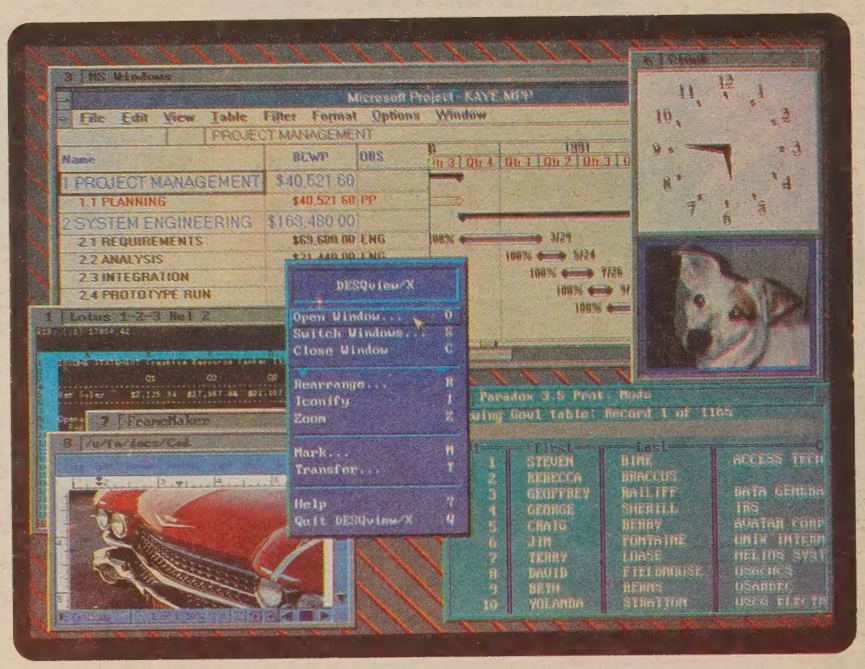
Turn your measly PC into a graphical workstation.

Looks the Way You Want

DESQview/X supports sculptured menus, customizable backgrounds, graphic buttons for launching programs or sets of programs, icons and online context-sensitive help to make computing easy and fun. If you are a DESQview user, you'll find DESQview/X very familiar, with an improved look.

Multitasks DOS & Windows Programs

Quarterdeck is the acknowledged pioneer in multitasking and DESQview/X gives you high performance multitasking, with graphical DOS and MS-Windows programs running side-by-side.



Works the Way You Want

Move immediately from one program to the next. Mark and transfer text. Define keystroke or button-driven macros. Set up sets of programs to open together at a keystroke or mouse click so you're ready to work on your projects. You can change menus, add sub-menus. Change commands. What's more, you can specify window size and color. And if you are using DOS text programs, you can set them up so that the font changes size as you change the size of the window. We call this feature scalable DOS windows (see the Lotus window on the right side of the screen).

DESQview/X is a powerful, efficient environment for increasing productivity.

DESQview/X gives you an efficient graphical multitasking windowing environment with a doorway to the future

Serious PC users, rejoice.

At last. For everyone waiting for a GUI (graphical user interface) that doesn't demand a major sacrifice in speed and hardware overhead, we present The Answer.

DESQview/X is a joy to use, with its editable pop-up menus, customizable backgrounds and icons. With its built-in Adobe Type Manager, it gives you highly readable scalable DOS windows. It gives you mouse control and keyboard equivalents for every command. It lets you define keystroke macros to speed repetitive tasks. File management and mark and transfer. It gives you 8514/A, Super VGA and DGIS high resolution graphics support for great detail and more windows. Plus maximum memory usage with our best-selling QEMM-386 memory manager—included with DESQview/X.

1991 BYTE AWARDS OF EXCELLENCE

And for all this power, it needs only a 386 or 486 PC with 4MB RAM and 40MB hard disk.

Welcome to the windowing, multitasking graphical user environment that transforms the software you already own.

Yes! Please Send:

Qty	Product	5-1/4	3-1/2	Each	Totals
	DESQview/X			$275.00	
	DESQview/X Network Mgr. (TCP/IP)			$200.00	
	OPEN LOOK interface			$200.00	
	OSF/Motif interface			$250.00	
				Shipping & Handling $10 (Canada & USA only)	
				California Residents add 8.25%	
				Grand Total	

Payment method ☐Visa ☐MasterCard Expires ____/____

Card # _____

Name _____

Address _____

City _____ State ____ Zip _____

Or call (800) 354-3222 for faster service

Please allow 3 weeks for delivery

Registered users of Quarterdeck products are eligible for a special offer. Call (800) 354-3222 7AM-5PM PST.

Quarterdeck

Quarterdeck Office Systems, 150 Pico Boulevard, Santa Monica, CA 90405 (310) 392-9851 Fax (310) 314-4219

©1992 Quarterdeck Office Systems. Trademarks are property of their respective owners.

Computerland
Newport Beach (714) 476-8360

Compuclassics
Canoga Park (818) 347-7500

Software Supermarket
Los Angeles (310) 477-5122

Egghead
Los Angeles (310) 477-1577

Quantum Microsystems
Northridge (818) 886-4276

Dustin America
Woodland Hills (818) 710-9174

PCS
Oxnard (805) 984-9656

Comp USA
(formerly Softwarehouse)
Torrance (310) 540-0593
Fountain Valley (714) 965-0580

Software Etc.
Northridge (818) 993-9167

Super Computer Center
Fountain Valley (714) 754-1166
Torrance (310) 542-8977

Microage
Century City (310) 552-2211